

Technical Note 7

Land at Junction 22 of the M1, Cliffe Hill Farm

TECHNICAL NOTE 7

LAND AT JUNCTION 22 OF THE M1, CLIFFE HILL FARM

Prepared For

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CONTENTS

1	Introduction	4
1.1	Background	4
1.2	Purpose of this Note	4
1.3	Structure of this Note	4
1.4	Limitations of the Report	4
2	National Highways Comments	5
3	Updated M1 Junction 22 LinSig Modelling	7
3.2	Existing Layout	7
3.3	Proposed Layout	10
4	Summary	14

TABLES

Table 2.1 – National Highways comments and applicant response	5
Table 3.1 – M1 Junction 22 Roundabout LinSig Results – Base	7
Table 3.2 – M1 Junction 22 Roundabout LinSig Results – Proposed Layout	10

APPENDICES

Appendix A	National Highways Consultation Response
Appendix B	Model Calibration Analysis
Appendix C	Controller Specification
Appendix D	M1 Junction 22 – Existing Layout LinSig Model Output
Appendix E	M1 Junction 22 – Proposed Layout LinSig Model Output

1 Introduction

1.1 Background

- 1.1.1 Ridge and Partners LLP (formerly Hub Transport Planning Ltd) have been commissioned by Caddick Developments Limited to provide transport advice for a proposed commercial development on land at Cliffe Hill Farm, Markfield.
- 1.1.2 Following submission of a Transport Assessment Addendum (TAA) report in June 2026, a Technical Note (TN 6) was produced to address comments raised by National Highways on the 14th July 2026.
- 1.1.3 This Technical Note addresses further comments which were provided by National Highways on the 18th August 2026 regarding the M1 Junction 22 LinSig model. The response from National Highways is provided in **Appendix A**.

1.2 Purpose of this Note

- 1.2.1 The purpose of this Technical Note is to provide a formal response to National Highways.

1.3 Structure of this Note

- 1.3.1 Following this introduction, the note is set out as follows:
- Section 2.0 – National Highways Comments;
 - Section 3.0 – Updated M1 Junction 22 LinSig Modelling; and
 - Section 4.0 – Summary.

1.4 Limitations of the Report

- 1.4.1 This report has been undertaken at the request of Caddick Developments Limited, thus should not be entrusted to any third party without written permission from Ridge and Partners LLP. However, should any information contained within this report be used by any unauthorised third party, it is done so entirely at their own risk and shall not be the responsibility of Ridge and Partners LLP.
- 1.4.2 This report has been compiled using data from certain external sources (such as the TRICS database); these sources are considered trustworthy and therefore the data provided is considered accurate and relevant at the time of preparing this report.

2 NATIONAL HIGHWAYS COMMENTS

- 2.1.1 The comments made by National Highways are presented alongside the applicant's response in **Table 2.1**.

Table 2.1 – National Highways comments and applicant response

National Highways Comment	Applicant Response
Model Validation	
To support the queue length data already provided, we would welcome your Excel analysis comparing modelled and observed queue lengths on a lane-by-lane basis. This should include a conversion of the queue surveys to PCUs, adjusted queues for when the full extent of the queue was unable to be observed, and the queue length comparison. Additionally, all of the roundabout approaches have flares, so please ensure you understand how LinSig reports queue length values on a long lane and a flare lane group to ensure your analysis of the observed data matches the same methodology. Whilst we are not expecting a perfect level of validation across all lanes, please try to ensure the model validates as well as possible.	Queue surveys cannot be converted into Passenger Car Units (PCUs) because the data is not presented by class of vehicle. However, the spreadsheet in Appendix B presents a comparison between modelled and observed queues and shows that the model calibrates well. It should also be noted that the queue length surveys show the maximum queue length in each 5-minute period (i.e., the average queue during each five minute period may be lower), therefore the calibration is considered to be robust.
Signal Specification	
We note you have used a LinSig model provided by LCC as the basis for your analysis. Can you please provide a copy of the latest Signal Controller Specification Documents to confirm that the LinSig model does replicate how the junction currently operates.	The Signal Controller Specifications for both controllers at the roundabout are provided in Appendix C . The LinSig model is consistent with this specification and therefore no changes to the model inputs (e.g., phasing, staging, Intergreens etc) have been made.
Model Geometry	
The modelled lane length of Arm 7 Lane 3 (Eastern circulatory) is a little bit shorter than it appears on street. Therefore, the entered lane length should be reviewed to ensure it represents the capacity of this stop line.	The length of Arm 7 Lane 3 has been now amended in both the base and proposed models from 28m to 46m.
On Arm 8 (A50 Westbound approach), it is not clear why the short lane has moved from lane 2 in the base model to lane 1 in the proposed model. Please explain this change as it is not evident in the drawing that has been supplied.	This has now been amended in the proposed model to reflect the base model structure.
Also on Arm 8, the flare length has also increased from 10pcu (or 57.5m) in the base model to 76m in the proposed model. The lane width at the start of the proposed flare is 4.8m within the drawing. It should be clarified if it has been assumed that two vehicles can queue side by side at that point.	Drawing T22523.012 shows that two large cars can queue side by side at the start of the proposed flare.

National Highways Comment	Applicant Response																																																																																																														
Additionally, further information should be provided to demonstrate how the proposed works increase the capacity on this roundabout approach (arm 8), in particular how the kerblines around the bus stop have been altered.	Please refer to Drawing T22523.012 which shows there is sufficient carriageway width 76m back from the stop line to queue two cars side by side. The bus stop layby has been moved c.20m west to allow for the proposed toucan crossing to be located. It has not been proposed to increase the overall width of the carriageway.																																																																																																														
Pedestrian Green Value																																																																																																															
The two new pedestrian crossings are both shown to have a crossing distance of 7.3m, but the crossing on the eastbound carriageway (Phase C) has a minimum green value of 5 seconds, whilst the crossing on the westbound carriageway (Phase D) has a minimum green value of 6 seconds. Please explain why these two values vary from each other.	Minimum green times for both crossings have been amended to five seconds. This is based on TAL 1/02 timing chart for an 8m carriageway width. Timing chart <table><tr><th></th><th>Carriageway width</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th></tr><tr><td>All-Red Period</td><td colspan="13">1 Or up to 3 seconds for a forced change</td></tr><tr><td>Green Man Period</td><td></td><td>4</td><td>4</td><td>4</td><td>4</td><td>5</td><td>5</td><td>5</td><td>6</td><td>6</td><td>7</td><td>7</td><td>7</td></tr><tr><td rowspan="2">Clearance Period</td><td>Minimum (see note)</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td></tr><tr><td>Maximum</td><td>4</td><td>5</td><td>7</td><td>9</td><td>10</td><td>12</td><td>14</td><td>15</td><td>17</td><td>19</td><td>20</td><td>22</td></tr><tr><td></td><td>Forced</td><td>7</td><td>8</td><td>10</td><td>12</td><td>13</td><td>15</td><td>17</td><td>18</td><td>20</td><td>22</td><td>23</td><td>25</td></tr><tr><td rowspan="2">Total Period</td><td>Minimum</td><td>9</td><td>9</td><td>9</td><td>9</td><td>10</td><td>10</td><td>10</td><td>11</td><td>11</td><td>12</td><td>12</td><td>12</td></tr><tr><td>Maximum</td><td>13</td><td>14</td><td>16</td><td>18</td><td>20</td><td>22</td><td>24</td><td>26</td><td>28</td><td>31</td><td>32</td><td>34</td></tr></table>		Carriageway width	4	5	6	7	8	9	10	11	12	13	14	15	All-Red Period	1 Or up to 3 seconds for a forced change													Green Man Period		4	4	4	4	5	5	5	6	6	7	7	7	Clearance Period	Minimum (see note)	3	3	3	3	3	3	3	3	3	3	3	3	Maximum	4	5	7	9	10	12	14	15	17	19	20	22		Forced	7	8	10	12	13	15	17	18	20	22	23	25	Total Period	Minimum	9	9	9	9	10	10	10	11	11	12	12	12	Maximum	13	14	16	18	20	22	24	26	28	31	32	34
	Carriageway width	4	5	6	7	8	9	10	11	12	13	14	15																																																																																																		
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	Maximum	13	14	16	18	20	22	24	26	28	31	32	34																																																																																																		

3 UPDATED M1 JUNCTION 22 LINSIG MODELLING

3.1.1 This section presents the results for the existing and proposed junction layouts for the M1 Junction 22 Roundabout using LinSig.

3.1.2 To keep the tables as concise as possible, the link with the highest Degree of Saturation (DoS) on each approach has been reported.

3.2 Existing Layout

3.2.1 The existing layout for the M1 Junction 22 signalised roundabout has been assessed using LinSig; detailed input data and results is included in **Appendix D**, and the results are summarised in **Table 3.1**.

Table 3.1 – M1 Junction 22 Roundabout LinSig Results – Base

APPROACH	AM PEAK 08:00 – 09:00			PM PEAK 17:00 – 18:00		
	DOS (%)	QUEUE (PCU)	DELAY (S/PCU)	DOS (%)	QUEUE (PCU)	DELAY (S/PCU)
2025 Baseline						
Southern Circulatory	66.0	9	8	62.2	8	8
M1 NB Off-Slip	88.7	10	40	86.1	9	36
Western Circulatory	64.5	2	5	63.1	2	7
A511	88.0	14	30	82.5	12	24
Northern Circulatory	66.1	8	11	61.9	7	8
M1 SB Off-Slip	87.3	12	28	86.8	10	29
Eastern Circulatory	64.1	3	5	49.7	5	6
A50 WB	87.8	12	26	87.3	11	24
Cliffe Lane	46.8	2	17	32.9	1	12
Cycle Time (s) (C1 and C2)	60/57			60/51		
PRC (%)	1.4			3.2		
Delay (PCU/Hr)	61.02			55.04		

APPROACH	AM PEAK 08:00 – 09:00			PM PEAK 17:00 – 18:00		
	DOS (%)	QUEUE (PCU)	DELAY (S/PCU)	DOS (%)	QUEUE (PCU)	DELAY (S/PCU)
2028 Future Base						
Southern Circulatory	78.9	12	10	80.7	12	11
M1 NB Off-Slip	83.0	9	32	83.8	9	31
Western Circulatory	81.7	3	7	70.7	2	7
A511	86.6	14	26	79.8	12	22
Northern Circulatory	77.3	9	13	75.3	8	12
M1 SB Off-Slip	79.5	10	22	69.3	7	21
Eastern Circulatory	86.8	4	7	64.2	2	7
A50 WB	90.3	14	25	80.1	9	17
Cliffe Lane	59.4	2	27	49.5	2	23
Cycle Time (s) (C1 and C2)	60/57			60/51		
PRC (%)	-0.4			7.3		
Delay (PCU/Hr)	63.74			51.45		
2030 Future Base						
Southern Circulatory	80.1	12	10	80.8	12	11
M1 NB Off-Slip	83.0	9	32	84.8	10	32
Western Circulatory	84.5	3	7	70.6	2	6
A511	87.2	14	26	84.5	13	26
Northern Circulatory	78.0	10	13	75.2	8	12
M1 SB Off-Slip	81.4	11	23	69.7	7	18

APPROACH	AM PEAK 08:00 – 09:00			PM PEAK 17:00 – 18:00		
	DOS (%)	QUEUE (PCU)	DELAY (S/PCU)	DOS (%)	QUEUE (PCU)	DELAY (S/PCU)
Eastern Circulatory	88.6	7	8	72.7	4	8
A50 WB	89.8	14	24	85.7	11	20
Cliffe Lane	64.0	3	30	58.4	2	27
Cycle Time (s) (C1 and C2)	60/57			60/51		
PRC (%)	0.2			5.0		
Delay (PCU/Hr)	64.95			56.77		
2036 Future Base						
Southern Circulatory	83.0	13	11	86.6	14	12
M1 NB Off-Slip	84.2	9	33	84.8	10	32
Western Circulatory	88.6	3	6	74.1	2	6
A511	89.4	15	29	81.6	12	24
Northern Circulatory	80.8	10	14	72.7	7	12
M1 SB Off-Slip	84.6	12	23	80.2	10	26
Eastern Circulatory	81.6	6	12	75.0	5	12
A50 WB	97.7	25	45	88.2	12	22
Cliffe Lane	69.5	4	37	79.2	5	48
Cycle Time (s) (C1 and C2)	60/57			60/51		
PRC (%)	-8.6			2.0		
Delay (PCU/Hr)	83.07			62.67		

- 3.2.2 The results show that the existing layout would operate within theoretical capacity during all assessed scenarios.

3.3 Proposed Layout

- 3.3.1 The proposed layout for the M1 Junction 22 signalised roundabout, which incorporates the proposed toucan crossing on the A50 to the east of the junction, has been assessed using LinSig; detailed input data and results is included in **Appendix E**, and the results are summarised in **Table 3.2**.

Table 3.2 – M1 Junction 22 Roundabout LinSig Results – Proposed Layout

APPROACH	AM PEAK 08:00 – 09:00			PM PEAK 17:00 – 18:00		
	DOS (%)	QUEUE (PCU)	DELAY (S/PCU)	DOS (%)	QUEUE (PCU)	DELAY (S/PCU)
2028 Future Base + Proposed Development						
Southern Circulatory	81.1	12	11	83.6	13	12
M1 NB Off-Slip	80.2	8	29	81.0	9	28
Western Circulatory	86.2	2	7	72.0	2	6
A511	94.3	19	39	86.1	13	27
Northern Circulatory	85.6	11	14	84.4	9	14
M1 SB Off-Slip	92.0	16	32	74.5	9	17
Eastern Circulatory	82.5	5	8	77.5	2	6
A50 WB	87.0	14	30	80.7	11	17
Cliffe Lane	59.2	2	27	50.6	2	24
A50 EB Exit	70.7	20	5	60.8	13	4
Cycle Time (s) (C1, C2 and C3)	60/57/228			60/51/228		
PRC (%)	-4.8			4.6		
Delay (PCU/Hr)	84.57			61.32		
2030 Future Base + Proposed Development						

APPROACH	AM PEAK 08:00 – 09:00			PM PEAK 17:00 – 18:00		
	DOS (%)	QUEUE (PCU)	DELAY (S/PCU)	DOS (%)	QUEUE (PCU)	DELAY (S/PCU)
Southern Circulatory	82.8	12	11	83.2	13	11
M1 NB Off-Slip	80.2	8	29	86.4	10	33
Western Circulatory	85.9	2	6	74.7	2	6
A511	97.7	24	54	85.3	13	27
Northern Circulatory	86.1	11	14	83.5	9	14
M1 SB Off-Slip	95.2	19	40	77.8	10	18
Eastern Circulatory	85.0	6	9	81.9	2	5
A50 WB	90.5	16	25	82.5	11	18
Cliffe Lane	61.3	2	29	61.3	2	30
A50 EB Exit	71.4	20	6	61.6	14	4
Cycle Time (s) (C1, C2 and C3)	60/57/228			60/51/228		
PRC (%)	-8.5			4.2		
Delay (PCU/Hr)	98.24			64.47		
2036 Future Base + Proposed Development						
Southern Circulatory	87.2	15	11	87.8	14	12
M1 NB Off-Slip	85.9	10	34	86.7	10	33
Western Circulatory	87.1	3	7	77.2	2	6
A511	98.0	25	55	84.6	13	26
Northern Circulatory	89.2	12	15	83.0	8	14
M1 SB Off-Slip	96.0	21	41	79.4	10	19

APPROACH	AM PEAK 08:00 – 09:00			PM PEAK 17:00 – 18:00		
	DOS (%)	QUEUE (PCU)	DELAY (S/PCU)	DOS (%)	QUEUE (PCU)	DELAY (S/PCU)
Eastern Circulatory	82.8	5	8	77.0	4	10
A50 WB	99.5	30	54	84.9	12	27
Cliffe Lane	66.1	3	35	77.6	4	47
A50 EB Exit	73.2	22	6	62.4	14	4
Cycle Time (s) (C1, C2 and C3)	60/57/228			60/51/228		
PRC (%)	-10.5			2.5		
Delay (PCU/Hr)	126.11			69.90		

- 3.3.2 The results show that the M1 Junction 22 roundabout is forecast to operate within theoretical capacity during all assessed AM peak scenarios. During all assessed PM peak scenarios, all approaches are forecast to operate within desirable capacity.
- 3.3.3 When comparing the with and without development scenarios across all scenarios, the increase to delays and queues are forecast to be small on all approaches and are therefore not considered to represent a severe impact in line with the NPPF.
- 3.3.4 On the A50 EB Exit approach, which replicates the impact of the proposed toucan crossing on the eastbound carriageway, the largest mean maximum queue of 22 PCUs is forecast to occur in the nearside lane during the 2036 Future Base + Proposed Development AM peak scenario, which is the equivalent to c.126m. While this means that the queue could slightly encroach on the circulatory, the following key points are:
- The results are based on the toucan crossing being called every fourth cycle (i.e., every four to five minutes), which is robust and likely to overestimate the number of demands across both peak periods;
 - The end of the queue would not block back other movements taking place on the circulatory (noting that the nearside and middle lanes on the M1 Southbound Off-Slip are both designated for left turn movements only);
 - LinSig can only model fixed green times; whereas M1 Junction 22 currently operates with a dynamic signal system (MOVA/SCOOT) which can adjust green times given to each approach every cycle to balance and manage queue lengths; and
 - Other design elements such as on-crossing detectors, kerbside detectors and queue detectors can be implemented to manage the queues appropriately.

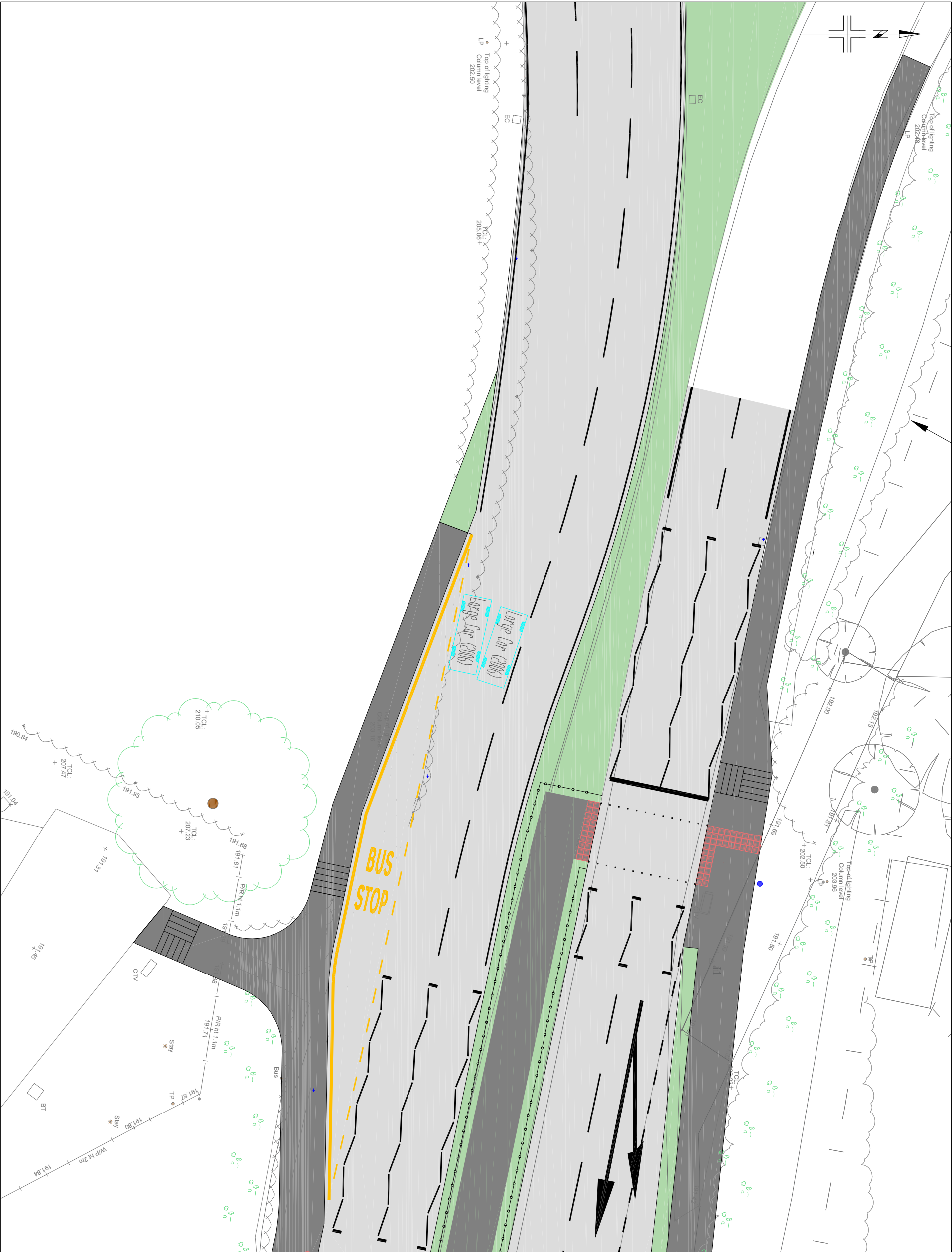
- 3.3.5 Taking the above into account, the impact of the proposed development on the M1 Junction 22 Roundabout is not considered to be severe in line with the NPPF. Therefore, no further mitigation, over and above the toucan crossing proposal, is required.

4 SUMMARY

- 4.1.1 Ridge and Partners LLP (formerly Hub Transport Planning Ltd) have been commissioned by Caddick Developments Limited to provide transport advice for a proposed commercial development on land at Cliffe Hill Farm, Markfield.
- 4.1.2 Following submission of a Transport Assessment Addendum (TAA) report in June 2026, a Technical Note (TN 6) was submitted to address comments raised by National Highways on the 14th July 2026. This Technical Note addresses further comments which were provided on the 18th August 2026 regarding the M1 Junction 22 LinSig model.
- 4.1.3 This assessment demonstrates that the impact of the proposed development on the operation of the M1 Junction 22 roundabout would not be severe in line with the NPPF.

-
- Side view of a car with dimensions: 5.079 (overall length), 3.035 (wheelbase), and 0.816 (overhang).

Large Car (2006)	5,079m
Overall Length	1,872m
Overall Width	1,525m
Min Body Ground Clearance	0,310m
Max Track Width	1,831m
Lock to lock time	4,005
Kerb to kerb Turning Radius	5,900m

[illegible]

**APPENDIX A
RESPONSE****NATIONAL HIGHWAYS CONSULTATION**



National Highways Planning Response (NHPR 25-01) Formal Recommendation to an Application for Planning Permission

From: Ian Doust (Head of Planning & Development)
Operations Directorate
Midlands Region
National Highways
PlanningM@nationalhighways.co.uk

To: **Hinckley & Bosworth Borough Council** (FAO Emma Baumber)
planning@hinckley-bosworth.gov.uk

CC: transportplanning@dft.gov.uk
spatialplanning@nationalhighways.co.uk

Council's Reference: 25/00931/FUL

Location: Cliffe Hill Farm Little Shaw Lane Markfield Leicestershire LE67 9PP

Proposal: Redevelopment of a logistics park for storage and distribution (Class B8), general industry (Class B2), ancillary office space (Class E) and associated infrastructure.

National Highways Ref: NH/25/13260

Referring to the consultation on a planning application dated 10th October 2025, referenced above, in the vicinity of the M1 that forms part of the Strategic Road Network, notice is hereby given that National Highways' formal recommendation is as follows:

- a) ~~**No Objection:** see reasons at Annex A.~~
- b) ~~**Conditional Approval:** National Highways recommends that planning conditions and/or obligations as set out in Annex A be attached to any planning permission that may be granted.~~
- c) **Deferral:** National Highways is not currently in a position to support this application and requests further assessment, evidence, revisions and/or dialogue as set out in Annex A.
- d) ~~**Refusal:** recommend that the application be refused for the reasons set out in Annex A.~~

Highways Act 1980 Section 175B is not relevant to this application.¹

This represents National Highways' formal recommendation and is copied to the Department for Transport as per the terms of our Licence.

Should the Local Planning Authority not propose to determine the application in accordance with this recommendation they are required to consult the Secretary of State for Transport, as set out in the [Town and Country Planning \(Development Affecting Trunk Roads\) Direction 2018](#), via transportplanning@dft.gov.uk and may not determine the application until the consultation process is complete.

The Local Planning Authority must also copy any consultation under the 2018 Direction to PlanningM@nationalhighways.co.uk.

This response and all comments outlined herein are made in respect of planning matters only in National Highways' position as a statutory planning consultee, and does not confer any proprietary rights nor amount to the giving or refusal of consent, assent, approval, or awareness of or by National Highways in or of any other aspects or matters (including, but not limited to, the use of property belonging to National Highways). If anyone wishes for National Highways to consider any aspects which do not relate to planning submissions, they should call our contact centre on 0300 123 5000.

Signature: 

Date: 18 August 2026

Name: Adrian Chadha

Position: Assistant Spatial Planner

National Highways

Three Snowhill, Snow Hill Queensway, Birmingham, B4 6GA

Adrian.Chadha@nationalhighways.co.uk

¹ Where relevant, further information will be provided within Annex A.

Annex A **National Highways' assessment of the proposed development**

National Highways has been appointed by the Secretary of State for Transport as a strategic highway company under the provisions of the Infrastructure Act 2015 and is the highway authority, traffic authority and street authority for the Strategic Road Network (SRN). The SRN is a critical national asset and as such we work to ensure that it operates and is managed in the public interest, both in respect of current activities and needs as well as in providing effective stewardship of its long-term operation and integrity.

Deferral

It is recommended that the application should not be approved for a period of three months from the date of this response. This will allow sufficient time for the applicant to provide further information and for National Highways to review and respond to the information provided.

Reasons

National Highways has reviewed the Local Model Validation Report, dated August 2025, and the LinSig Model for the M1 Junction 22, provided in August 2026, alongside other associated documents. The documents have been provided to support with the planning process of the proposed 72,500 sqm of B8/B2 land use located on the northeast quadrant of the M1 Junction 22, part of the SRN.

Based on National Highways' review of the documents, our comments have been set out below.

Local Model Validation Report (LMVR)

National Highways notes that the proposed development has been assessed using the PRTM, and that the submitted LMVR relates to the 2023 base year model. The purpose of this review is to confirm that the base year model has been satisfactorily calibrated and validated against observed traffic counts, screenline counts and journey time surveys, such that it provides a suitable basis for forecasting future year conditions.

Based on our review, we note that the SRN junctions within the vicinity of the development have been appropriately represented and assessed. We also acknowledge that the identified minor network issues have been addressed, and National Highways is satisfied that there are no significant issues affecting the representation of the SRN within the base model.

We note the use of interpolated screenline acceptability criteria for screenlines containing fewer than five count locations and are content with this approach. We are also satisfied that the screenline validation criteria have been achieved. Furthermore, we are content that individual traffic count validation and journey time validation have

been undertaken appropriately and demonstrate satisfactory model performance within the vicinity of the proposed development.

On the basis of the information submitted, National Highways is satisfied that the local area model has been adequately calibrated and validated and is therefore suitable for use in assessing the forecast year scenarios.

M1 Junction 22 LinSig Model

Model Validation

To support the queue length data already provided, we would welcome your Excel analysis comparing modelled and observed queue lengths on a lane-by-lane basis. This should include a conversion of the queue surveys to PCUs, adjusted queues for when the full extent of the queue was unable to be observed, and the queue length comparison.

Additionally, all of the roundabout approaches have flares, so please ensure you understand how LinSig reports queue length values on a long lane and a flare lane group to ensure your analysis of the observed data matches the same methodology. Whilst we are not expecting a perfect level of validation across all lanes, please try to ensure the model validates as well as possible.

Signal Specification

We note you have used a LinSig model provided by LCC as the basis for your analysis. Can you please provide a copy of the latest Signal Controller Specification Documents to confirm that the LinSig model does replicate how the junction currently operates.

Model Geometry

The modelled lane length of Arm 7 Lane 3 (Eastern circulatory) is a little bit shorter than it appears on street. Therefore, the entered lane length should be reviewed to ensure it represents the capacity of this stop line.

On Arm 8 (A50 Westbound approach), it is not clear why the short lane has moved from lane 2 in the base model to lane 1 in the proposed model. Please explain this change as it is not evident in the drawing that has been supplied.

Also on Arm 8, the flare length has also increased from 10pcu (or 57.5m) in the base model to 76m in the proposed model. The lane width at the start of the proposed flare is 4.8m within the drawing. It should be clarified if it has been assumed that two vehicles can queue side by side at that point.

Additionally, further information should be provided to demonstrate how the proposed works increase the capacity on this roundabout approach (arm 8), in particular how the kerblines around the bus stop have been altered.

Pedestrian Green Value

The two new pedestrian crossings are both shown to have a crossing distance of 7.3m, but the crossing on the eastbound carriageway (Phase C) has a minimum green value of 5 seconds, whilst the crossing on the westbound carriageway (Phase D) has a minimum green value of 6 seconds. Please explain why these two values vary from each other.

Traffic Impacts

National Highways will be in better position to comment on the potential traffic impacts of the proposed development on the SRN once the above queries have been resolved.

Standing advice to the local planning authority

The Climate Change Committee notes that for the UK to achieve net zero carbon status by 2050, action is needed to support a modal shift away from car travel. The NPPF supports this position, with paragraphs 77 and 110 prescribing that significant development should offer a genuine choice of transport modes, while paragraphs 109 and 115 advise that appropriate opportunities to promote walking, cycling and public transport should be taken up as part of a vision-led approach.

Moreover, the carbon reduction hierarchy (avoid-switch-improve) as set out in clause 4.3 of PAS2080:2023 promotes approaches and measures to minimise resource consumption and thereby reduce carbon emissions.

These considerations should be weighed alongside any relevant Local Plan policies to ensure that planning decisions are in line with the necessary transition to net zero carbon.

APPENDIX B MODEL CALIBRATION ANALYSIS

ARM A M1 SLIP ROADS (N)			ARM B A50			ARM C M1 SLIP ROADS (S)			ARM D CLIFFE LANE		ARM E A511		
LANE 1	LANE 2	LANE 3	LANE 1	LANE 2	LANE 3	LANE 1	LANE 2	LANE 3	LANE 1	LANE 2	LANE 1	LANE 2	LANE 3

AM Surveyed	9.9	7.2	8.3	7.2	6.3	9.8	5.7	6.1	0.9	3.3	0.4	4.5	9.6	9.8
AM Model	12.0		6.9	12.2		10.4	9.8		0.5	1.7		13.6		10.8

PM Surveyed	6.6	6.3	7.7	7.5	6.3	8.8	4.9	8.2	1.5	2.8	0.4	4.0	8.6	9.6
PM Model	9.6		5.8	10.5		10	9.2		0.6	0.9		12.1		9.6

APPENDIX C CONTROLLER SPECIFICATION

Project data

Project	M1/J22 - A50/A511 Controller 1 NB
Program date	11-12-2020
Version	2
Programmer	Simon Wakeling
Country	UK
City	Leicester
Street1	A50
Street2	A511
Controller type	PTC1-TR2500A
Controller board	EC2 16 Mb RAM
Controller Serial number	Hardware Serial No.
Report created at	2/15/2022 11:42 AM
Database filename (.cpf)	M1_J22_NB_V3.cpf
Configurator version	12.0.2.0

Configuration Notes
Version 2 11/12/2020 SW Added UTC interface and PSVP mode for MOVA 15/02/22 Edited intergreen B to A to 7s Edited timetable entries 2 and 3 Edited CLF plans 1, 2 and 3 Edited event pulses 6, 7, 12 and 13

FACILITIES MODES AND PRIORITIES

FACILITIES

Facility	Enabled
Manual Control	Yes
Manual Step On Mode	No
CLF	Yes
UTC Facility	Yes
Hurry Call Mode	No
Priority	No
MOVA via UTC TO bits	Yes
MOVA M-inputs / PSVP	No

Hurry call (high priority) options

Use hurry call (high priority) mode for all red moves:	Yes
Part Time shutdown HC priority movements required:	No

MODES AND PRIORITY

Mode	PRIO	Dem. set leave	Dem. set enter
Hurry call (high priority)	1	-	-
Urban Traffic Control (UTC)	5	-	-
Hurry call (std priority)	2	-	-
Manual control	3	Start-up demand set	-
Cableless linking facility (CLF)	7	-	-
Vehicle actuated (VA)	8	-	-
Simple fix time (FT)	-	Start-up demand set	-
Public service vehicle priority	6	-	-
Selected cableless linking	4	-	-
Selected vehicle actuated	4	-	-
Selected fix time	4	Start-up demand set	-
ImFlow control	-	-	-
	-	-	-

Revertive Demand Sets

Phase	Type	RDC	Start-up	2	3	4	5	6	7	8
A	802 T: vehicle	A	Yes	No	No	No	No	No	No	No
B	802 T: vehicle	B	Yes	No	No	No	No	No	No	No
C	802 T: vehicle	C	Yes	No	No	No	No	No	No	No
D	802 T: vehicle	D	Yes	No	No	No	No	No	No	No
E	Dummy	-	No	No	No	No	No	No	No	No
F	Dummy	-	No	No	No	No	No	No	No	No

STREAMS AND STAGES

STREAM

ID	Name	Type
1	STREAM1	Junction
2	STREAM2	Junction

STAGE

ID	Description	Stream No.	Demands AFTER Min Exp.	Demands BEFORE Min Exp.	Ripple Change	Startup stage	Arterial reversion stage	Switch off stage	All Red stage
1	STAGE1	1	No	Yes	No	Yes	No	No	No
2	STAGE2	1	No	Yes	No	No	No	No	No
3	ALLRED	1	No	Yes	No	No	No	Yes	Yes
4	STAGE4	2	No	Yes	No	Yes	No	No	No
5	STAGE5	2	No	Yes	No	No	No	No	No
6	ALLRED	2	No	Yes	No	No	No	Yes	Yes

Phases in stages

	A	B	C	D	E	F
1	X	-	-	-	-	-
2	-	X	-	-	-	-
3	-	-	-	-	X	-
4	-	-	X	-	-	-
5	-	-	-	X	-	-
6	-	-	-	-	-	X

PHASES

Types

Phase	Site Phase	Description	Type	Associated Phase
A	A	Westbound Circulating to C/ville	802 T: vehicle	-
B	B	Northbound off slip from South	802 T: vehicle	-
C	C	Northbound Circulating to M1 North	802 T: vehicle	-
D	D	A511 to Leicester	802 T: vehicle	-
E	E	Dummy E - O/N revert - stream 1	Dummy	-
F	F	Dummy F - O/N revert - stream 2	Dummy	-

CONDITIONS

Phase	Tactile Interlock	Appearance type	Termination type
A	No	Always	At end of stage
B	No	Always	At end of stage
C	No	Always	At end of stage
D	No	Always	At end of stage
E	No	Always	At end of stage
F	No	Always	At end of stage

TIMINGS

Phase	Type	Min green	Min red	Start Amber	Amber	Ped Period V	Ped Period VI	Ped Period VII	Ped Period VIII	Pre-time max
A	802 T: vehicle	7	1	2	3					No
B	802 T: vehicle	7	1	2	3					No
C	802 T: vehicle	7	1	2	3					No
D	802 T: vehicle	7	1	2	3					No
E	Dummy	4	1							No
F	Dummy	4	1							No

Note: Use of zero second blackout Ped Perod 5 on Type 814 PD: is not current DfT policy and should be discouraged

PHASE GREEN TIMING RANGES

PHASE	MIN Lower Limit	MIN Upper Limit	MAX Lower Limit	MAX Upper Limit
A	5	30	0	120
B	5	30	0	120
C	5	30	0	120
D	5	30	0	120
E	0	30	0	120
F	0	30	0	120

PHASE TIMING SETS

Regular maximums

	1	2	3	4
A	33	18	21	16
B	17	12	14	12
C	23	16	13	16
D	27	18	22	12
E				
F				

Alternative maximums

	1	2	3	4
A				
B				
C				
D				
E				
F				

Variable blackout/red periods

	1	2	3	4
A				
B				
C				
D				
E				
F				

Minimum green

	1	2	3	4
A				
B				
C				
D				
E				
F				

PSVP inhibition times

	1	2	3	4
A				
B				
C				
D				
E				
F				

PSVP maximum green times

	1	2	3	4
A				
B				

	1	2	3	4
C				
D				
E				
F				

PHASE MATRICES

Settings

Starting intergreen	Handset maximum	Flashing Amber	All Red
8	30	0	0

Handset Int Offset	Default RLM Int	
0	2	

Opposing and conflicting

	A	B	C	D	E	F
A	-	C	-	-	C	-
B	C	-	-	-	C	-
C	-	-	-	C	-	C
D	-	-	C	-	-	C
E	C	C	-	-	-	-
F	-	-	C	C	-	-

Intergreen times

	A	B	C	D	E	F
A		6			3	
B	7				3	
C				6		3
D			6			3
E	2	2				
F			2	2		

Handset intergreen limits

	A	B	C	D	E	F
A		5			3	
B	5				3	
C				5		3
D			5			3
E	2	2				
F			2	2		

RLM additional intergreens

	A	B	C	D	E	F
A						
B						
C						
D						
E						
F						

RLM phase inhibits

	A	B	C	D	E	F
A	-	-	-	-	-	-
B	-	-	-	-	-	-
C	-	-	-	-	-	-
D	-	-	-	-	-	-
E	-	-	-	-	-	-

	A	B	C	D	E	F
F	-	-	-	-	-	-

LAMP MONITORING

Applied sensing technology

Individual Monitoring Channels Used for RLUs ?	No
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Lamp Switches

Phase	Type	SWR	SWA	SWG	SWWL
A	802 T: vehicle	R01	A01	G01	
B	802 T: vehicle	R02	A02	G02	
C	802 T: vehicle	R03	A03	G03	
D	802 T: vehicle	R04	A04	G04	
E	Dummy				
F	Dummy				

Phase Lamp Types

Phase	Description	Type	Red	Amber	Green	Wait
A	Westbound Circulating to C/ville	T	T-LED 230	T-LED 230	T-LED 230	-
B	Northbound off slip from South	T	T-LED 230	T-LED 230	T-LED 230	-
C	Northbound Circulating to M1 North	T	T-LED 230	T-LED 230	T-LED 230	-
D	A511 to Leicester	T	T-LED 230	T-LED 230	T-LED 230	-
E	Dummy E - O/N revert - stream 1	-	-	-	-	-
F	Dummy F - O/N revert - stream 2	-	-	-	-	-

Lamp Monitor Settings

Phase	Description	Red 1	Red 2	Amber	Green
A	Westbound Circulating to C/ville	Maintenance	None	Maintenance	Maintenance
B	Northbound off slip from South	Maintenance	None	Maintenance	Maintenance
C	Northbound Circulating to M1 North	Maintenance	None	Maintenance	Maintenance
D	A511 to Leicester	Maintenance	None	Maintenance	Maintenance
E	Dummy E - O/N revert - stream 1	None	None	None	None
F	Dummy F - O/N revert - stream 2	None	None	None	None

Safety Lamp Monitor Shutdown Action

Phase	Description	Red 1	Red 2	Amber
A	Westbound Circulating to C/ville	None	None	None
B	Northbound off slip from South	None	None	None
C	Northbound Circulating to M1 North	None	None	None
D	A511 to Leicester	None	None	None
E	Dummy E - O/N revert - stream 1	None	None	None
F	Dummy F - O/N revert - stream 2	None	None	None

PHASE DELAYS

FIXED TIME

FIXED TIME TO CURRENT MAXIMUM

STREAM	Fixed
STREAM1	Yes
STREAM2	Yes

Phase	Demand	Extend
A	Yes	Yes
B	Yes	Yes
C	Yes	Yes
D	Yes	Yes
E	Yes	Yes
F	Yes	Yes

STAGE MOVES

Move sets

Mode	SET
Hurry call (high priority)	1
Urban Traffic Control (UTC)	2
Hurry call (std priority)	1
Manual control	1
Cableless linking facility (CLF)	1
Vehicle actuated (VA)	1
Simple fix time (FT)	1
Public service vehicle priority	1

Set 1

	1	2	3	4	5	6
1	-	A	A	-	-	-
2	A	-	A	-	-	-
3	A	A	-	-	-	-
4	-	-	-	-	A	A
5	-	-	-	A	-	A
6	-	-	-	A	A	-

Set 2

	1	2	3	4	5	6
1	-	A	P	-	-	-
2	A	-	P	-	-	-
3	A	A	-	-	-	-
4	-	-	-	-	A	P
5	-	-	-	A	-	P
6	-	-	-	A	A	-

Set 3

	1	2	3	4	5	6
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-

Set 4

	1	2	3	4	5	6
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-

Set 5

	1	2	3	4	5	6
1	-	-	-	-	-	-

	1	2	3	4	5	6
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-

Set 6

	1	2	3	4	5	6
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-

Set 7

	1	2	3	4	5	6
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-

Set 8

	1	2	3	4	5	6
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-

MANUAL STAGE SELECTION

	1	2
But 1	1	4
But 2	2	4
But 3	1	5
But 4	-	-
But 5	-	-
But 6	-	-
But 7	-	-
But 8	-	-
But 9	-	-
But 10	-	-
But 11	-	-
But 12	-	-
But 13	-	-
But 14	-	-
But 15	-	-
But 16	-	-

Detectors

Application

ID	Detector	Type	Phase	Call	Cancel	Extend	Associated Det	DEM	CANCEL
1	AIN1	Vehicle loop	A	20	5	3.5	-	No	No
2	AX2	Vehicle loop	A			4	-	Yes	No
3	ASL3	Vehicle loop	A			1.6	-	Yes	No
4	AIN4	Vehicle loop	A	20	5	3.5	-	No	No
5	AX5	Vehicle loop	A			4	-	Yes	No
6	ASL6	Vehicle loop	A			1.6	-	Yes	No
7	AIN7	Vehicle loop	A	20	5	3.5	-	No	No
8	AX8	Vehicle loop	A			4	-	Yes	No
9	ASL9	Vehicle loop	A			1.6	-	Yes	No
10	BIN10	Vehicle loop	B	20	5	3	-	No	No
11	BX11	Vehicle loop	B			4	-	Yes	No
12	BSL12	Vehicle loop	B			1.6	-	Yes	No
13	BIN13	Vehicle loop	B	20	5	3	-	No	No
14	BX14	Vehicle loop	B			4	-	Yes	No
15	BSL15	Vehicle loop	B			1.6	-	Yes	No
16	BIN16	Vehicle loop	B	20	5	3.5	-	No	No
17	BX17	Vehicle loop	B			4	-	Yes	No
18	BSL18	Vehicle loop	B			1.6	-	Yes	No
19	BQ1	Queue detector	-	10	5		-	No	No
20	BQ2	Queue detector	-	10	5		-	No	No
21	CX1	Vehicle loop	C			4	-	Yes	No
22	CSL2	Vehicle loop	C			1.6	-	Yes	No
23	CIN3	Vehicle loop	C	20	5	3.5	-	No	No
24	CX4	Vehicle loop	C			4	-	Yes	No
25	CSL5	Vehicle loop	C			1.6	-	Yes	No
26	CX6	Vehicle loop	C			4	-	Yes	No
27	CSL7	Vehicle loop	C			1.6	-	Yes	No
28	DX8	Vehicle loop	D			4	-	Yes	No
29	DSL9	Vehicle loop	D			1.6	-	Yes	No
30	DIN10	Vehicle loop	D	20	5	3	-	No	No
31	DX11	Vehicle loop	D			4	-	Yes	No
32	DSL12	Vehicle loop	D			1.6	-	Yes	No
33	DIN13	Vehicle loop	D	20	5	3	-	No	No
34	DX14	Vehicle loop	D			4	-	Yes	No
35	DSL15	Vehicle loop	D			1.6	-	Yes	No
36	CX1_QUEUE	-	-	20	5		-	No	No

Detector Fault Monitoring

[illegible]

[illegible]

IMFLOW

Enable ImFlow	Log to TDC
No	No

Settings

Wait time on deadlock (s)	Retries on UTC deadlock	Retries on UTC conflict
300	5	1

CONFLICT EXTENSION RED

CABLELESS LINKING FACILITY

Global settings

Setting	Value
Sync. Mode	Daily
Sync. Day	Monday
Ref. time	06:00

Plans

Plan No	Cycle	Offset	Cycle EntryTime	Cycle ExitTime
1	60	0		
2	40	0		
3	60	0		
4	30	0		

Functions and actions

PLAN 1

Action No	Time	Influence	Stage	Stream
1	10	IM: Immediate move	2	1
2	16	IM: Immediate move	5	2
3	27	IM: Immediate move	1	1
4	44	IM: Immediate move	4	2

PLAN 2

Action No	Time	Influence	Stage	Stream
1	6	IM: Immediate move	5	2
2	13	IM: Immediate move	1	1
3	26	IM: Immediate move	4	2
4	37	IM: Immediate move	2	1

PLAN 3

Action No	Time	Influence	Stage	Stream
1	3	IM: Immediate move	5	2
2	14	IM: Immediate move	1	1
3	31	IM: Immediate move	4	2
4	54	IM: Immediate move	2	1

PLAN 4

Action No	Time	Influence	Stage	Stream
1	0	IM: Immediate move	1	1
2	6	IM: Immediate move	4	2
3	17	IM: Immediate move	2	1
4	23	IM: Immediate move	5	2

OTU

Units

General Integral OTU options

Discrete OTU

ID	Invert control bits	Invert reply bits
1	No	Yes
2	No	Yes

Control and reply bits

Control / Reply

Function	Arg	Label	Position ID	Label	Arg	Function
F	1	F1	1	G1	1	G
F	2	F2	2	G2	2	G
F	3	F3	3	G3	3	G
DX	1	DX1	4	DF1	1	FLOG
-	0		5	LF11	3	UF
-	0		6	LF12	4	UF
FM	1	FM	7	FC	0	FC
TS	0	TS	8	GR1	1	GR1
SO	0	SO	9	RR	1	RR
-	0		10	CF	0	CF
-	0		11	HC1	0	H
-	0		12		0	-
-	0		13		0	-
-	0		14		0	-
SF	1	TO1	15	CRB1	1	UF
SF	2	TO2	16	CRB2	2	UF
F	4	F4	17	G4	4	G
F	5	F5	18	G5	5	G
F	6	F6	19	G6	6	G
DX	2	DX2	20	DF2	2	FLOG
-	0		21	LF21	5	UF
-	0		22	LF22	6	UF
-	0		23	HC2	1	H
-	0		24		0	-
-	0		25		0	-
-	0		26		0	-
-	0		27		0	-
-	0		28		0	-
-	0		29		0	-
-	0		30		0	-
-	0		31		0	-
-	0		32		0	-

UTC Demand/Extend bits - Phases/Stages allocation

Bit	Phases Demanded	Phases Extended	Stages Demanded	Stages Extended
DX 1	A, B	A, B		
DX 2	C, D	C, D		

Keep default Demand reply options

Default Stage Demand (SD) reply	No
Default Phase Demand (DR) reply	No

RTC

Synchronisation time (UTC TS input)	12:00
Confirm time (UTC RT output)	0:0:0

Special UTC Reply bits

	G1/G2	RR
Manual mode operative	Yes	Yes
Manual mode selected	Yes	Yes
No lamp power (excluding RLM and PT)	Yes	n/a
Normal not selected on the manual panel	No	Yes

CG reply bit weekday-coded	No
----------------------------	----

UG405 bit mapping

Settings

Enable UG405	No
OTU System Code Number (SCN)	

Control / Reply

ID	Label	Controller SCN	UG405 Name	Bit Index	Label	Controller SCN	UG405 name	Bit index
1	F1		-		G1		-	
2	F2		-		G2		-	
3	F3		-		G3		-	
4	DX1		-		DF1		-	
5			-		LF11		-	
6			-		LF12		-	
7	FM		-		FC		-	
8	TS		-		GR1		-	
9	SO		-		RR		-	
10			-		CF		-	
11			-		HC1		-	
12			-				-	
13			-				-	
14			-				-	
15	TO1		-		CRB1		-	
16	TO2		-		CRB2		-	
17	F4		-		G4		-	
18	F5		-		G5		-	
19	F6		-		G6		-	
20	DX2		-		DF2		-	
21			-		LF21		-	
22			-		LF22		-	
23			-		HC2		-	
24			-				-	
25			-				-	
26			-				-	
27			-				-	
28			-				-	
29			-				-	
30			-				-	
31			-				-	
32			-				-	

HURRY CALLS

ID	Description	Target Stage	Delay (s)	Hold (s)	Prevent (s)	Call Rising Edge
1	Hurry Call 1	2	0	20	180	Yes

PUBLIC SERVICE VEHICLE PRIORITY

SPEED ASSESSMENT AND SPEED DISCRIMINATION

APPLICATION BUILDING BLOCKS

Software Switches (User Parameters)

ID	Name	Default	Min Value	Max Value
1	mDET27_SW	1	0	1
2	mDET28_SW	1	0	1
3	mDET29_SW	1	0	1
4	mDET30_SW	1	0	1
5	mDET57_SW	1	0	1
6	mDET58_SW	1	0	1
7	mDET59_SW	1	0	1
8	mDET60_SW	1	0	1
9	mDET61_SW	1	0	1
10	mDET62_SW	1	0	1

Event Pulses

ID	Name	Type	Input Type	On	OFF
1	CRB1	Wave	Level	2	600
2	CRB2	Wave	Level	2	600
3	Mdet27_Pulse	Pulse	Rising edge	8	2
4	Mdet28_Hold	Level	Level	10	8
5	Mdet28_OR	Level	Level	60	0
6	Mdet29_Pulse	Pulse	Rising edge	16	2
7	Mdet30_Hold	Level	Level	6	4
8	Mdet30_OR	Level	Level	60	0
9	Mdet57_Pulse	Pulse	Rising edge	8	2
10	Mdet58_Hold	Level	Level	10	8
11	Mdet58_OR	Level	Level	60	0
12	Mdet59_Pulse	Pulse	Rising edge	4	2
13	Mdet60_Hold	Level	Level	12	8
14	Mdet60_OR	Level	Level	60	0
15	Mdet61_Pulse	Pulse	Rising edge	8	2
16	Mdet62_Hold	Level	Level	10	8
17	Mdet62_OR	Level	Level	60	0
18	Nodemand_ST1	Level	Level	15	0
19	Nodemand_ST2	Level	Level	15	0
20	Time_sync	Pulse	Level	1	1
21	Det31_32_Pulse	Pulse	Rising edge	0	2
22	Det63_64_Pulse	Pulse	Rising edge	0	2
23	PulseGR1xpl	Pulse	Rising edge	0	3
24	MOVA_Running	Wave	Level	0.5	0.5

Event Pulse Input Conditioning
evp1() = (macm(0)>1) && (stgc(0)!=0) && mpauto(0) && (mUTC(0)==0) && (mPSVP(0)==0); evp2() = (macm(1)>1) && (stgc(1)!=0) && mpauto(1) && (mUTC(1)==0) && (mPSVP(1)==0); evp3() = get(h_xkopmvi5_csc,KOPMVI5_C2F2); evp4() = get(h_xkopmvi5_csc,KOPMVI5_C2F2); evp5() = get(h_xkopmvi5_csc,KOPMVI5_C2F2); evp6() = get(h_xkopmvi5_csc,KOPMVI5_C2F5); evp7() = get(h_xkopmvi5_csc,KOPMVI5_C2F5); evp8() = get(h_xkopmvi5_csc,KOPMVI5_C2F5); evp9() = get(h_xkopmvi5_csc,KOPMVI5_C2F5); evp10() = get(h_xkopmvi5_csc,KOPMVI5_C2F5);

Event Pulse Input Conditioning

```
evp11() = get(h_xkopmvi5_csc,KOPMVI5_C2F5);  
evp12() = uF(1);  
evp13() = uF(1);  
evp14() = uF(1);  
evp15() = uF(2);  
evp16() = uF(2);  
evp17() = uF(2);  
evp18() = (dr(A)==0) && (dr(B)==0) && (ngp1(A)==0) && (ngp1(B)==0);  
evp19() = (dr(C)==0) && (dr(D)==0) && (ngp1(C)==0) && (ngp1(D)==0);  
evp20() = mtcf(8);  
evp21() = evp(18);  
evp22() = evp(19);  
evp23() = clfg1(0);  
evp24() = mPSVP(0) || mPSVP(1);
```

Event Filter Input Conditioning

SPECIAL CONDITIONING - (VM Functions)

O.T.U. Control & Reply Bit Special Conditioning

```
rf_2(arg) = cfa;

rf_11(arg)
if (arg==1) then
    return evp(23);
endif
return 0;
end

rf_28(arg)
if (arg == 1) then return (dr(A) || dr(B) || er(A) || er(B)); endif
if (arg == 2) then return (dr(C) || dr(D) || er(C) || er(D)); endif
return FALSE;
end

rf_32(arg)
if (arg==3) then
    return rf1(0) || rf1(1);
endif
if (arg==4) then
    return rf2(0) || rf2(1);
endif
if (arg==1) then
    return ((mpauto(0) && (((mPSVP(0) || evp(CRB1)) && (mUTC(0)==0)) || (in(utciTO1) && ufac(0)))) != 1);
endif
if (arg==2) then
    return ((mpauto(1) && (((mPSVP(1) || evp(CRB2)) && (mUTC(1)==0)) || (in(utciTO2) && ufac(1)))) != 1);
endif
if (arg==5) then
    return rf1(2) || rf1(3);
endif
if (arg==6) then
    return rf2(2) || rf2(3);
endif

return 0;
end

rf_34(arg) = (macm(xp) != 6);

rf_40(arg) = mPSVP(xp);

urG1() = (stgc(0)==1) && (stgr(0,0,0));

urDR1() = dr(A);

urG2() = (stgc(0)==2) && (stgr(0,0,0));

urDR2() = dr(B);

urG3() = (stgc(0)==3) && (stgr(0,0,0));

urDR3() = dr(E);

urG4() = (stgc(1)==4) && (stgr(1,0,0));

urDR4() = dr(C);

urG5() = (stgc(1)==5) && (stgr(1,0,0));

urDR5() = dr(D);

urG6() = (stgc(1)==6) && (stgr(1,0,0));

urDR6() = dr(F);
```

Integral O.T.U. Special Conditioning

```
otu_dstate(d) = get(h_xdet_sts, d) & DET_BEZET_MASK;

otu_dfault(d) = get(h_xdet_sts, d) & DET_FAULT_MASK;

otu_dcnt(d) = get(h_xdet_cnt, d);
```

U.T.C. (G1/G2) Special Conditioning**CLF Request & Inhibit Special Conditioning****P.S.V.P. Pre Check-in, Check-in & Check-out Special Conditioning****Hurry Call Delay, Force, Demand & Inhibit Special Conditioning**

```
ihc() = mUTC(0) || mPSVP(0);

hclr() = ddro(BQ1) || ddro(BQ2);

hclf() = (stgc(0)== 2) && (stgr(0,0,0)) && (stgc(1)== 4) && (stgr(1,0,0));
```

Phase Delay Appearance Special Conditioning**Stream On/Off Control Special Conditioning**

```
roffsync() = okoff(0) && okoff(1);

mac1_swon(t) = yellow_period(0,t);

macon1() = (minon(xp)==0);

macoff1() = ((macm(xp) <= 1) && (mact(xp) <= tson(7)));

mac2_swon(t) = yellow_period(1,t);

macon2() = (minon(xp)==0);

macoff2() = ((macm(xp) <= 1) && (mact(xp) <= tson(7)));
```

Detector Count Activity Window Special Conditioning

```
nokbs()

var det;
for det=0 to (nrel(h_dfunc) -1) do
  if ddo(det) && (fcteg(get(h_dsg,det))>0) && (ddr(det)!=1) && (get(h_dfunc,det)==25) then
    put(h_dfunc,det,65);
  endif
  if (get(h_dfunc,det)==65) && (((ddo(det) || (dr(get(h_dsg,det))))!=1) || fcg(get(h_dsg,det))) then
    put(h_dfunc,det,25);
  endif
endfor
end
```

Phase Control Special Conditioning

```
latch(ph) = dx(ph) && (fcg(ph)==0);

pd_ALL(ph)

if ((xsf(XSF_PSET_ERR) != AUTOSET_STATE_DONE) && (xsf(XSF_PSET_ERR) != AUTOSET_STATE_ERROR)) then return (1); endif
end

pe_ALL(ph) = ngp1(ph);

pd_A() = uDX(0) || pd_ALL(A);
```

Phase Control Special Conditioning

```
pe_A() = uDX(0) || pe_ALL(A);

pd_B() = uDX(0) || pd_ALL(B);

pe_B() = uDX(0) || pe_ALL(B);

pd_C() = uDX(1) || pd_ALL(C);

pe_C() = uDX(1) || pe_ALL(C);

pd_D() = uDX(1) || pd_ALL(D);

pe_D() = uDX(1) || pe_ALL(D);
```

Phase Timing Set Selection Special Conditioning

Dummy Detector Special Conditioning

```
vmdet_CX1_QUEUE() = ddo(CX1);
```

Mode Control Special Conditioning

```
rHCH() = rar(xp);

rUTC()
if (xp==0) then
return (in(UTC_I1) || in(UTC_I2) || in(UTC_I3)) && (in(UTC_I15)==0);
endif

if (xp==1) then
return (in(UTC_I17) || in(UTC_I18) || in(UTC_I19)) && (in(UTC_I16)==0);
endif
end

rHCL()
if (xp==0) then
return hfhn(1);
endif
return 0;
end

rMAN() = mpman(xp);

rCLF()

if (xp==0) then
return clfp && clfv(xp,clfp) && (clfi == 0);
endif
if (xp==1) then
return clfp && clfv(xp,clfp) && (clfi == 0);
endif
end

rVA() = 1;

rPSVP()
if (xp==0) then
return (in(UTC_I1) || in(UTC_I2) || in(UTC_I3)) && in(UTC_I15);
endif

if (xp==1) then
return (in(UTC_I17) || in(UTC_I18) || in(UTC_I19)) && in(UTC_I16);
endif
endif
end

rSCLF()

if (xp==0) then
return clfp && clfv(xp,clfp) && (mpclf(xp) || clfmp);
endif
if (xp==1) then
return clfp && clfv(xp,clfp) && (mpclf(xp) || clfmp);
endif
end
```

Mode Control Special Conditioning

```
rSVA() = mpva(xp);  
  
rSFT() = mpft(xp);  
  
tlcfa_ImFlow_ouerrule(a) = ouerruleIMFLOW(a);      /* Check whether ImFlow is currently ouerruled */
```

All Red Detection Operation Special Conditioning

Manual Panel Stage LED Conditions

```
MpStageLEDsNoDefault()  
mpdiso(20,1);  
mpdiso(21,1);  
mpdiso(22,1);  
mpdiso(23,1);  
mpdiso(24,1);  
mpdiso(25,1);  
mpdiso(26,1);  
mpdiso(27,1);  
mpdiso(28,1);  
mpdiso(29,1);  
mpdiso(30,1);  
mpdiso(31,1);  
mpdiso(32,1);  
mpdiso(33,1);  
mpdiso(34,1);  
mpdiso(35,1);  
end  
  
DriveMpStageLEDs()  
MpStageLEDsNoDefault();  
mpledfunc20();  
mpledfunc21();  
mpledfunc22();  
mpledfunc23();  
mpledfunc24();  
mpledfunc25();  
mpledfunc26();  
mpledfunc27();  
mpledfunc28();  
mpledfunc29();  
mpledfunc30();  
mpledfunc31();  
mpledfunc32();  
mpledfunc33();  
mpledfunc34();  
mpledfunc35();  
end  
  
mpledfunc20() = cmled(20,(stgc(0)==1)*(2-stgr(0,1,0)));  
mpledfunc21() = cmled(21,(stgc(0)==2)*(2-stgr(0,1,0)));  
mpledfunc22() = cmled(22,(stgc(0)==3)*(2-stgr(0,1,0)));  
mpledfunc23() = cmled(23,(stgc(1)==4)*(2-stgr(1,1,0)));  
mpledfunc24() = cmled(24,(stgc(1)==5)*(2-stgr(1,1,0)));  
mpledfunc25() = cmled(25,(stgc(1)==6)*(2-stgr(1,1,0)));  
  
mpledfunc26() = 0;  
mpledfunc27() = 0;  
mpledfunc28() = 0;  
mpledfunc29() = 0;  
mpledfunc30() = 0;  
mpledfunc31() = 0;  
mpledfunc32() = 0;  
mpledfunc33() = 0;
```

Manual Panel Stage LED Conditions

```
mp1edfunc34() = 0;

mp1edfunc35() = 0;
```

Initialisation & General Special Conditioning

```
init()
open_handles();
return 1;
end

dfm_f() = sfl(-1) || fci(-1);
```

User Defined VM Functions

```
post_100ms()
Mova_Outputs();
Leds();
XKOP_Outputs();
end

Mova_Outputs()
cout(mDET19,ddro(AIN1) || ddro(AIN4) || ddro(AIN7));
cout(mDET20,ddro(BIN10) || ddro(BIN13) || ddro(BIN16));
cout(mDET21,ddro(BQ1) || ddro(BQ2));
cout(mDET27,evp(3) && UP(0));
cout(mDET28,evp(4) && (evp(5)==0) && UP(1));
cout(mDET29,evp(6) && UP(2));
cout(mDET30,evp(7) && (evp(8)==0) && UP(3));
cout(mDET31,evp(21) && mtcf(7));
cout(mDET32,evp(21) && (mtcf(7)==0));
cout(mDET48,ddro(CX1_QUEUE));
cout(mDET49,ddro(CIN3));
cout(mDET50,ddro(DIN10) || ddro(DIN13));
cout(mDET57,evp(9) && UP(4));
cout(mDET58,evp(10) && (evp(11)==0) && UP(5));
cout(mDET59,evp(12) && UP(6));
cout(mDET60,evp(13) && (evp(14)==0) && UP(7));
cout(mDET61,evp(15) && UP(8));
cout(mDET62,evp(16) && (evp(17)==0) && UP(9));
cout(mDET63,evp(22) && mtcf(7));
cout(mDET64,evp(22) && (mtcf(7)==0));
cout(mAIN1,ddo(AIN1));
cout(mAX2,ddo(AX2));
cout(mASL3,ddo(ASL3));
cout(mAIN4,ddo(AIN4));
cout(mAX5,ddo(AX5));
cout(mASL6,ddo(ASL6));
cout(mAIN7,ddo(AIN7));
cout(mAX8,ddo(AX8));
cout(mASL9,ddo(ASL9));
cout(mBIN10,ddo(BIN10));
cout(mBX11,ddo(BX11));
cout(mBSL12,ddo(BSL12));
cout(mBIN13,ddo(BIN13));
cout(mBX14,ddo(BX14));
cout(mBSL15,ddo(BSL15));
cout(mBIN16,ddo(BIN16));
cout(mBX17,ddo(BX17));
cout(mBSL18,ddo(BSL18));

end

Leds()
cmled(0,mUTC(0));
cmled(1,mUTC(1));
cmled(2,get(h_xkopmvi5_csc,KOPMVI5_MOVAC2_ST1));
cmled(3,get(h_xkopmvi5_csc,KOPMVI5_MOVAC2_ST2));
cmled(4,out(mDET19));
cmled(4,out(mDET20) || out(mDET21));
mpdiso(13,1);
cmled(13,((mUTC(0) || (mUTC(1) || (evp(MOVA_Running)==1)))));
cmled(18,3*(xsf(60)==0));
cmled(6,(mPSVP(0) && (in(utciTO1)==1)));
cmled(7,(mPSVP(1) && (in(utciTO2)==1)));
mpdiso(9,1);
cmled(9, mVA(xp));
mpdiso(11,1);
```


User Defined VM Functions

```
cmled(11, (mCLF(0) || mCLF(1)));
end

XKOP_Outputs()
put(h_xkopmvo5_csc,KOPMVO5_C1F2,uF(2));
put(h_xkopmvo5_csc,KOPMVO5_C1F5,uF(5));
put(h_xkopmvo5_csc,KOPMVO5_MOVAC1_ST1,mUTC(0));
put(h_xkopmvo5_csc,KOPMVO5_MOVAC1_ST2,mUTC(1));
end
```

Stage Moves

Hurry Call High Mode - HCH (Normally for Part Time / Prom Swap Facility)
mHCH1_3d() = rar(xp); mHCH2_3d() = rar(xp); mHCH4_6d() = rar(xp); mHCH5_6d() = rar(xp);

Hurry Call Standard Mode - HCL
mHCL1_2d() = hfhn(1); mHCL1_3d() = FALSE; mHCL2_3d() = FALSE; mHCL2_1d() = FALSE; mHCL3_1d() = FALSE; mHCL3_2d() = hfhn(1); mHCL4_5d() = FALSE; mHCL4_6d() = FALSE; mHCL5_6d() = FALSE; mHCL5_4d() = FALSE; mHCL6_4d() = FALSE; mHCL6_5d() = FALSE;

Vehicle Actuated Mode - VA
mVA1_2d() = dr(B); mVA1_2e() = er(A); mVA1_2i() = FALSE; mVA1_3d() = evp(18) && (mtcf(7)==0); mVA1_3e() = er(A); mVA1_3i() = FALSE; mVA2_3d() = evp(18) && (mtcf(7)==0); mVA2_3e() = er(B); mVA2_3i() = FALSE; mVA2_1d() = dr(A) (evp(18) && mtcf(7)); mVA2_1e() = er(B); mVA2_1i() = FALSE; mVA3_1d() = dr(A) (evp(18) && mtcf(7)); mVA3_1e() = dSTGe(3, 1); mVA3_1i() = FALSE; mVA3_2d() = dr(B); mVA3_2e() = dSTGe(3, 2); mVA3_2i() = FALSE; mVA4_5d() = dr(D);

Vehicle Actuated Mode - VA

```
mVA4_5e() = er(C);

mVA4_5i() = FALSE;

mVA4_6d() = evp(19) && (mtcf(7)==0);

mVA4_6e() = er(C);

mVA4_6i() = FALSE;

mVA5_6d() = evp(19) && (mtcf(7)==0);

mVA5_6e() = er(D);

mVA5_6i() = FALSE;

mVA5_4d() = dr(C) || (evp(19) && mtcf(7));

mVA5_4e() = er(D);

mVA5_4i() = FALSE;

mVA6_4d() = dr(C) || (evp(19) && mtcf(7));

mVA6_4e() = dSTGe(6, 4);

mVA6_4i() = FALSE;

mVA6_5d() = dr(D);

mVA6_5e() = dSTGe(6, 5);

mVA6_5i() = FALSE;
```

Fixed Time Mode - FT

```
mFT1_2d() = dSTGd(1, 2);

mFT1_2e() = dSTGe(1, 2);

mFT1_2i() = FALSE;

mFT1_3d() = dSTGd(1, 3);

mFT1_3e() = dSTGe(1, 3);

mFT1_3i() = FALSE;

mFT2_3d() = dSTGd(2, 3);

mFT2_3e() = dSTGe(2, 3);

mFT2_3i() = FALSE;

mFT2_1d() = dSTGd(2, 1);

mFT2_1e() = dSTGe(2, 1);

mFT2_1i() = FALSE;

mFT3_1d() = dSTGd(3, 1);

mFT3_1e() = dSTGe(3, 1);

mFT3_1i() = FALSE;

mFT3_2d() = dSTGd(3, 2);

mFT3_2e() = dSTGe(3, 2);

mFT3_2i() = FALSE;

mFT4_5d() = dSTGd(4, 5);

mFT4_5e() = dSTGe(4, 5);

mFT4_5i() = FALSE;

mFT4_6d() = dSTGd(4, 6);

mFT4_6e() = dSTGe(4, 6);
```

Fixed Time Mode - FT

```
mFT4_6i() = FALSE;

mFT5_6d() = dSTGd(5, 6);

mFT5_6e() = dSTGe(5, 6);

mFT5_6i() = FALSE;

mFT5_4d() = dSTGd(5, 4);

mFT5_4e() = dSTGe(5, 4);

mFT5_4i() = FALSE;

mFT6_4d() = dSTGd(6, 4);

mFT6_4e() = dSTGe(6, 4);

mFT6_4i() = FALSE;

mFT6_5d() = dSTGd(6, 5);

mFT6_5e() = dSTGe(6, 5);

mFT6_5i() = FALSE;
```

Cableless Linking Mode - CLF

```
mCLF1_2d() = dCLFd(1, 2);

mCLF1_2i() = dCLFi(1, 2);

mCLF1_3d() = dCLFd(1, 3);

mCLF1_3i() = dCLFi(1, 3);

mCLF2_3d() = dCLFd(2, 3);

mCLF2_3i() = dCLFi(2, 3);

mCLF2_1d() = dCLFd(2, 1);

mCLF2_1i() = dCLFi(2, 1);

mCLF3_1d() = dCLFd(3, 1);

mCLF3_1i() = dCLFi(3, 1);

mCLF3_2d() = dCLFd(3, 2);

mCLF3_2i() = dCLFi(3, 2);

mCLF4_5d() = dCLFd(4, 5);

mCLF4_5i() = dCLFi(4, 5);

mCLF4_6d() = dCLFd(4, 6);

mCLF4_6i() = dCLFi(4, 6);

mCLF5_6d() = dCLFd(5, 6);

mCLF5_6i() = dCLFi(5, 6);

mCLF5_4d() = dCLFd(5, 4);

mCLF5_4i() = dCLFi(5, 4);

mCLF6_4d() = dCLFd(6, 4);

mCLF6_4i() = dCLFi(6, 4);

mCLF6_5d() = dCLFd(6, 5);

mCLF6_5i() = dCLFi(6, 5);
```

Urban Traffic Control Mode - UTC

```
mUTC1_2d() = dUTCd(1, 2);  
  
mUTC1_2i() = dUTCi(1, 2);  
  
mUTC2_1d() = dUTCd(2, 1);  
  
mUTC2_1i() = dUTCi(2, 1);  
  
mUTC3_1d() = dUTCd(3, 1);  
  
mUTC3_1i() = dUTCi(3, 1);  
  
mUTC3_2d() = dUTCd(3, 2);  
  
mUTC3_2i() = dUTCi(3, 2);  
  
mUTC4_5d() = dUTCd(4, 5);  
  
mUTC4_5i() = dUTCi(4, 5);  
  
mUTC5_4d() = dUTCd(5, 4);  
  
mUTC5_4i() = dUTCi(5, 4);  
  
mUTC6_4d() = dUTCd(6, 4);  
  
mUTC6_4i() = dUTCi(6, 4);  
  
mUTC6_5d() = dUTCd(6, 5);  
  
mUTC6_5i() = dUTCi(6, 5);
```

Public Service Priority Mode - PSVP

```
mPSVP1_2d() = in(UTC_I2) && in(UTC_I15);  
  
mPSVP1_2e() = dPSVPe(1, 2);  
  
mPSVP1_2i() = in(UTC_I1) && in(UTC_I15);  
  
mPSVP1_3d() = in(UTC_I3) && in(UTC_I15);  
  
mPSVP1_3e() = dPSVPe(1, 3);  
  
mPSVP1_3i() = in(UTC_I1) && in(UTC_I15);  
  
mPSVP2_3d() = in(UTC_I3) && in(UTC_I15);  
  
mPSVP2_3e() = dPSVPe(2, 3);  
  
mPSVP2_3i() = in(UTC_I2) && in(UTC_I15);  
  
mPSVP2_1d() = in(UTC_I1) && in(UTC_I15);  
  
mPSVP2_1e() = dPSVPe(2, 1);  
  
mPSVP2_1i() = in(UTC_I2) && in(UTC_I15);  
  
mPSVP3_1d() = in(UTC_I1) && in(UTC_I15);  
  
mPSVP3_1e() = dPSVPe(3, 1);  
  
mPSVP3_1i() = in(UTC_I3) && in(UTC_I15);  
  
mPSVP3_2d() = in(UTC_I2) && in(UTC_I15);  
  
mPSVP3_2e() = dPSVPe(3, 2);  
  
mPSVP3_2i() = in(UTC_I3) && in(UTC_I15);  
  
mPSVP4_5d() = in(UTC_I18) && in(UTC_I16);  
  
mPSVP4_5e() = dPSVPe(4, 5);  
  
mPSVP4_5i() = in(UTC_I17) && in(UTC_I16);  
  
mPSVP4_6d() = in(UTC_I19) && in(UTC_I16);  
  
mPSVP4_6e() = dPSVPe(4, 6);  
  
mPSVP4_6i() = in(UTC_I17) && in(UTC_I16);
```

Public Service Priority Mode - PSVP

```
mPSVP5_6d() = in(UTC_I19) && in(UTC_I16);

mPSVP5_6e() = dPSVPe(5, 6);

mPSVP5_6i() = in(UTC_I18) && in(UTC_I16);

mPSVP5_4d() = in(UTC_I17) && in(UTC_I16);

mPSVP5_4e() = dPSVPe(5, 4);

mPSVP5_4i() = in(UTC_I18) && in(UTC_I16);

mPSVP6_4d() = in(UTC_I17) && in(UTC_I16);

mPSVP6_4e() = dPSVPe(6, 4);

mPSVP6_4i() = in(UTC_I19) && in(UTC_I16);

mPSVP6_5d() = in(UTC_I18) && in(UTC_I16);

mPSVP6_5e() = dPSVPe(6, 5);

mPSVP6_5i() = in(UTC_I19) && in(UTC_I16);
```

Manual Control Mode - MAN

```
mMAN1_2d() = mstg(xp)==2;

mMAN1_3d() = mstg(xp)==3;

mMAN2_3d() = mstg(xp)==3;

mMAN2_1d() = mstg(xp)==1;

mMAN3_1d() = mstg(xp)==1;

mMAN3_2d() = mstg(xp)==2;

mMAN4_5d() = mstg(xp)==5;

mMAN4_6d() = mstg(xp)==6;

mMAN5_6d() = mstg(xp)==6;

mMAN5_4d() = mstg(xp)==4;

mMAN6_4d() = mstg(xp)==4;

mMAN6_5d() = mstg(xp)==5;
```

General (default) Stage Move Conditions

```
dSTGd(f,t) = drs(t);

dSTGe(f,t) = exm(t);

dUTCd(f,t)
if t==1 then return uF(1) || (uFD(1) && (uD(1) || in(utciTO1))); endif
if t==2 then return uF(2) || (uFD(2) && (uD(2) || in(utciTO1))); endif
if t==3 then return uF(3) || (uFD(3) && (uD(3) || in(utciTO1))); endif
if t==4 then return uF(4) || (uFD(4) && (uD(4) || in(utciTO2))); endif
if t==5 then return uF(5) || (uFD(5) && (uD(5) || in(utciTO2))); endif
if t==6 then return uF(6) || (uFD(6) && (uD(6) || in(utciTO2))); endif
return uF(t) || (uFD(t) && (uD(t) || drs(t)));
end

dUTCi(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));

dCLFd(f,t) = cIM(t) || (cDD(t) && drs(t)) || (cPS(t) && drs(t));

dCLFi(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));

dPSVPd(f,t) = drs(t);

dPSVPe(f,t) = exm(t);

dSTGd1() = dr(A);
```

General (default) Stage Move Conditions

```
dSTGe1() = er(A);

dPSVPd1() = pdp(A);

dPSVPe1() = pep(A);

dUTCd1(t) = uF(t) || (uFD(t) && (uD(t) || dr(A)));

dUTCi1(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));

dCLFd1(t) = cIM(t) || (cDD(t) && (dr(A))) || (cPS(t) && (dr(A)));

dCLFi1(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));

dSTGd2() = dr(B);

dSTGe2() = er(B);

dPSVPd2() = pdp(B);

dPSVPe2() = pep(B);

dUTCd2(t) = uF(t) || (uFD(t) && (uD(t) || dr(B)));

dUTCi2(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));

dCLFd2(t) = cIM(t) || (cDD(t) && (dr(B))) || (cPS(t) && (dr(B)));

dCLFi2(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));

dSTGd3() = dr(E);

dSTGe3() = er(E);

dPSVPd3() = pdp(E);

dPSVPe3() = pep(E);

dUTCd3(t) = uF(t) || (uFD(t) && (uD(t) || dr(E)));

dUTCi3(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));

dCLFd3(t) = cIM(t) || (cDD(t) && (dr(E))) || (cPS(t) && (dr(E)));

dCLFi3(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));

dSTGd4() = dr(C);

dSTGe4() = er(C);

dPSVPd4() = pdp(C);

dPSVPe4() = pep(C);

dUTCd4(t) = uF(t) || (uFD(t) && (uD(t) || dr(C)));

dUTCi4(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));

dCLFd4(t) = cIM(t) || (cDD(t) && (dr(C))) || (cPS(t) && (dr(C)));

dCLFi4(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));

dSTGd5() = dr(D);

dSTGe5() = er(D);

dPSVPd5() = pdp(D);

dPSVPe5() = pep(D);

dUTCd5(t) = uF(t) || (uFD(t) && (uD(t) || dr(D)));

dUTCi5(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));

dCLFd5(t) = cIM(t) || (cDD(t) && (dr(D))) || (cPS(t) && (dr(D)));

dCLFi5(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));

dSTGd6() = dr(F);

dSTGe6() = er(F);

dPSVPd6() = pdp(F);

dPSVPe6() = pep(F);
```

General (default) Stage Move Conditions

```
dUTCd6(t) = uF(t) || (uFD(t) && (uD(t) || dr(F)));  
  
dUTCi6(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));  
  
dCLFd6(t) = cIM(t) || (cDD(t) && (dr(F))) || (cPS(t) && (dr(F)));  
  
dCLFi6(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));
```


SYSTEM PARAMETERS

UK Parameters

Name	Description	Min	Max	Def	Value
MAN_TIMEOUT	Manual control timeout	60	600	600	600
MAN_DEMAND_ERROR	Duration of the manual demand error indication	0	60	5	5
MAN_ENABLE	Manual control enabled.	0	1	1	1
DFM_FUNC	Bit mask specifying behaviour of DFM indicator	0	999	1	1
CLF_TIMER_SYNC	Duration of the CLF group Timer Synchronisation Signal	0	0	0	0
UTC_TS	Time in HH:MM used for COTU_TS	0	2359	1200	1200
UTC_FORCE_TIMEOUT	The force bit watchdog timeout	120	300	200	200
UTC_FORCE_ACCEPT	The force accept timeout in system ticks.	1	10	4	4
UTC_LO_DELAY	Delay in seconds before COTU_LO changes is accepted.	0	99	10	10
UTC_RT_HOUR	Hours used for RT reply bit (-1 = any hour).	-1	23	0	0
UTC_RT_MIN	Minutes used for RT reply bit (-1 = any minute).	-1	59	0	0
UTC_RT_SEC	Seconds used for RT reply bit	-1	59	0	0
UTC_RT_DURATION	Duration of the RT reply bit in seconds	1	10	3	3
UTC_CG_DURATION	Duration of the CG reply bit in seconds	1	10	3	3
UTC_TSR_DURATION	Duration of the TSR reply bit in seconds	1	10	3	3
UTC_G1G2_FUNC	Bit mask specifying behaviour of G1/G2 reply bits	0	255	1	7
UTC_RR_FUNC	Bit mask specifying behaviour of RR reply bit	0	255	14	14
UTC_PV_ACCEPT	The PV accept time in system ticks	0	255	0	0
UTC_PV_HOLD	The PV hold time in system ticks	0	255	40	40
UKSTG_DIM_ALARM	The maximum time [in hours] for dimmed operation (-1 = solar cell disabled, 0 = enabled without timeout processing)	-1	100	24	24
UKSTG_DIM_FILTER	The call/cancel delay [in sec] for the DIM relays	0	255	15	15
UTC_CRB_PULSE_ON_TIME	CRB On Timer	0	1800	600	600
UTC_CRB_PULSE_OFF_TIME	CRB Off Timer	0	10	2	2

System Parameters

Name	Description	Min	Max	Value
MMI8408	XMMI: 8 x 40 MMI	0	1	1
XIN_L	XIN_L: Number of IN logging lines	1	999	10
XOUT_L	XOUT_L: Number of OUT logging lines	1	999	10
XDET_L	XDET_L: Number of DET logging lines	1	999	100
XDET_F	XDET_F: Status in case of fault	0	2	0
XSG_L	XSG_L: Number of SG logging lines	0	999	100
XHTTP	XHTTP: Presence of web server	0	1	1
XHTTP_PORT	XHTTP_PORT: Webserver port	0	65535	80
XLM_MAL	XLM_MAL: Go to major alarm if power reference(s) are not set	0	1	0
XLM_RLM	XLM_RLM: RLM callback interval in 0.1 [s]	0	100	10
XLM_T	XLM_T: Tracking off / on	0	20	5
XLM_TF	XLM_TF: Tracking filter	1	20	8
XLM_NV	XLM_NV: Nominal (bright) voltage	0	240	230
XLM_MON	XLM_MON: Monitoring type	0	10	3
XLM_AC	XLM_AC: Automatic calibration	0	1	1
XLM_DIM	XLM_DIM: Bright Din Calibration off / on	0	1	1
CLF_SYNC	CLF Synchronisation option.	0	3	0
CLF_SYNC_WDAY	CLF Weekly sync is done on..	1	7	1
CLF_TIMER_SYNC	Duration of the CLF group Timer Synchronisation Signal	0	2400	600
CLF_NON_BASE_TIME	Select base time or non base time (0 or 1)	0	1	1
XIOTU_RTS	RTS activated after # received characters (use 1, 2 or 3)	1	3	1
XIOTU_SCOOT	Default bit number used for scoot counted detectors (0 to 7)	0	7	0
XIOTU_CTS	CTS timeout per 10ms	4	10	6
UKMP_TYPE	UK Manual panel type (0=std, 1=ped, 2=multiple stages)	0	2	2
ENGTERM_BAUD	Engterm baudrate	0	99999	9600

Name	Description	Min	Max	Value
HCH_ALLRED	Use HCH for all red stage moves	0	1	1
HCH_SWOFF	Use HCH for switch off stage moves	0	1	0
PT_SYNC	Synchronize move to part time mode	0	1	1
CLF_MANUAL_STEP	Enable the Manual Step	0	1	0
CLF_DEFAULT_PLAN	None	-1	999	0
CLF_MANUAL_MEMOS	Memo for the manual step	0	1	0
COMPRESS_HARDWARE	Compress Hardware	0	1	0
XWDS_SENSOR_TIMEOUT	Wireless Detection sensor time out value	0	65535	60
ALERTPLUS_ENABLE	Alert+: Enable the service	0	1	0
ALERTPLUS_NRSESSIONS	Alert+: Number of sessions	1	99	2
ALERTPLUS_LOGINUSERG1	Alert+: Login code for user group 1	0	9999	0
ALERTPLUS_LOGINUSERG2	Alert+: Login code for user group 2	0	9999	0
ALERTPLUS_LOGINUSERG3	Alert+: Login code for user group 3	0	9999	0
ALERTPLUS_LOGINUSERG4	Alert+: Login code for user group 4	0	9999	0
IMFLOW_ENABLE	ImFlow enabled	0	1	0
IMFLOW_WDG_TIME	ImFlow: Wait time for deadlock supervision [s]	1	999	300
IMFLOW_MAX_WDG_RETRIES	ImFlow: Max. retries on deadlocks in UTC control	1	99	5
IMFLOW_MAX_CONFL_RETRIES	ImFlow: Max. retries on conflicts in UTC control	1	99	1
IMFLOW_SIM_IF	ImFlow Sim. interface	0	1	1
IMFLOW_TDC	ImFlow TDC logging	0	1	0
XWIFI	WiFi service activated [FlowNode]	0	1	0

Traffic Data Collector (TDC)

TDC enabled	Persistent	Readonly	MF (max. files)	Assigned memory
No	0	0	0	1 Mb

MEMO FIELDS

HISTORY	
Description	Text in the History text block between: --CREDAT-- and --UPDATE--
Contents	* This is memofield HISTORY

B_HISTORY	
Description	Text in the History text block between: --CREDAT-- and --UPDATE-- (AMSEC1.CNF)
Contents	; This is memofield HISTORY_B

ABC_INC	
Description	Code at the end of the file before the end of file remark (AMSEC1.CNF)
Contents	; This is memofield AMSEC_INC

XP1_INC	
Description	Code at the begin of the file, just below History, under the heading 'XP1_INC'.
Contents	/* This is memofield XP1_INC */

XP2_INC	
Description	Code under the heading 'XP2_INC', just before the 'XIN INPUTS' definitions.
Contents	/* This is memofield XP2_INC */

XP3_INC	
Description	Code under the heading 'XP3_INC', at the end of the file.
Contents	/* This is memofield XP3_INC */ P("MPDISO.R1") { P(0);D(1); P(1);D(1); P(2);D(1); P(3);D(1); P(4);D(1); P(5);D(1); P(6);D(1); P(7);D(1); P(13);D(1); P(18);D(1); }

SADAT_INC	
Description	Code at end of the file. (SADAT.CNF)
Contents	/* This is memofield SADAT_INC */ /* Function Stops CER Dets Extending phase A */ P("DFUNC.R30") { /* P(Clearance Det); D(0b00000000); */ }

VMFUNC_INC1	
Description	VMFUNC process conditions
Contents	/* This is memofield VMFUNC_INC1 */

VMFUNC_INC2	
Description	VMFUNC process conditions
Contents	/* This is memofield VMFUNC_INC2 */

HARDWARE CONFIGURATION

Device counts

Lamp control devices	Count	Detection devices	Count	I/O devices	Count
VIRTUAL-LCM	1	ED316	0	IO1616	4
LCM	1	MTS4E	9	RIO	0
RLU	0	WDS	0		
RLU-9	0	FLIR-ZONE	0		
		FLIR-OUTPUT	0	XSER6	0
XLS12	0	XD16	0	XIO16	0
Dummy-Phase	2	Dummy-Detector	1		

Optional devices	Setting
Manual Panel Type	Multi stage
Manual Panel Flashing	Disabled
Solar Cell Monitor	24 hour time out
Dimming Operating	LV 230V Solar Cell

Configuration - LCM / XLS12 / RLU

LCM --- Physical LCM: 01 --- 001: A/Red (R01) 002: A/Amber (A01) 003: A/Green (G01) 004: B/Red (R02) 005: B/Amber (A02) 006: B/Green (G02) 007: C/Red (R03) 008: C/Amber (A03) 009: C/Green (G03) 010: D/Red (R04) 011: D/Amber (A04) 012: D/Green (G04)	
---	--

Configuration - MTS4E / ED316

MTS4E --- Unit: 01 --- 001: Detector AIN1 002: Detector AX2 003: Detector ASL3 004: Detector AIN4 --- Unit: 02 --- 001: Detector AX5 002: Detector ASL6 003: Detector AIN7 004: Detector AX8 --- Unit: 03 --- 001: Detector ASL9 002: Detector BIN10 003: Detector BX11 004: Detector BSL12 --- Unit: 04 --- 001: Detector BIN13 002: Detector BX14 003: Detector BSL15 004: Detector BIN16 --- Unit: 05 --- 001: Detector BX17 002: Detector BSL18 003: Detector BQ1 004: Detector BQ2 --- Unit: 09 --- 001: Detector CX1 002: Detector CSL2 003: Detector CIN3 004: Detector CX4 --- Unit: 10 --- 001: Detector CSL5 002: Detector CX6 003: Detector CSL7 004: Detector DX8 --- Unit: 11 ---	
--	--

001: Detector DSL9 002: Detector DIN10 003: Detector DX11 004: Detector DSL12 --- Unit: 12 --- 001: Detector DIN13 002: Detector DX14 003: Detector DSL15	
--	--

IOT State - Lamp control

LCM	RLU
Unit Addr *	Unit Addr *
=====	=====
01 001 A/Red (R01)	
01 002 A/Amber (A01)	
01 003 A/Green (G01)	
01 004 B/Red (R02)	
01 005 B/Amber (A02)	
01 006 B/Green (G02)	
01 007 C/Red (R03)	
01 008 C/Amber (A03)	
01 009 C/Green (G03)	
01 010 D/Red (R04)	
01 011 D/Amber (A04)	
01 012 D/Green (G04)	

IOT State - Detection

MTS4E	
Unit Addr *	
=====	
01 001 AIN1	
01 002 AX2	
01 003 ASL3	
01 004 AIN4	
02 001 AX5	
02 002 ASL6	
02 003 AIN7	
02 004 AX8	
03 001 ASL9	
03 002 BIN10	
03 003 BX11	
03 004 BSL12	
04 001 BIN13	
04 002 BX14	
04 003 BSL15	
04 004 BIN16	
05 001 BX17	
05 002 BSL18	
05 003 BQ1	
05 004 BQ2	
09 001 CX1	
09 002 CSL2	
09 003 CIN3	
09 004 CX4	
10 001 CSL5	
10 002 CX6	
10 003 CSL7	
10 004 DX8	
11 001 DSL9	
11 002 DIN10	
11 003 DX11	
11 004 DSL12	
12 001 DIN13	
12 002 DX14	
12 003 DSL15	

IOT State - I/O

IO1616-IN			IO1616-OUT		
Unit	Addr	*	Unit	Addr	*
=====	=====	=====	=====	=====	=====
01	001	UTC_I1	01	001	UTC_O1
01	002	UTC_I2	01	002	UTC_O2
01	003	UTC_I3	01	003	UTC_O3
01	004	UTC_I4	01	004	UTC_O4
01	005	UTC_I7	01	005	UTC_O5
01	006	UTC_I8	01	006	UTC_O6
01	007	UTC_I9	01	007	UTC_O7
01	008	UTC_I15	01	008	UTC_O8
01	009	UTC_I16	01	009	UTC_O9
01	010	UTC_I17	01	010	UTC_O10
01	011	UTC_I18	01	011	UTC_O11
01	012	UTC_I19	01	012	UTC_O15
01	013	UTC_I20	01	013	UTC_O16
			01	014	UTC_O17
			01	015	UTC_O18
			01	016	UTC_O19
			02	001	UTC_O20
			02	002	UTC_O21
			02	003	UTC_O22
			02	004	UTC_O23
			02	005	mDET19
			02	006	mDET20
			02	007	mDET21
			02	008	mDET26
			02	009	mDET27
			02	010	mDET28
			02	011	mDET29
			02	012	mDET30
			02	013	mDET31
			02	014	mDET32
			02	015	mDET48
			02	016	mDET49
			03	001	mDET50
			03	002	mDET57
			03	003	mDET58
			03	004	mDET59
			03	005	mDET60
			03	006	mDET61
			03	007	mDET62
			03	008	mDET63
			03	009	mDET64
			03	010	mAIN1
			03	011	mAX2
			03	012	mASL3
			03	013	mAIN4
			03	014	mAX5
			03	015	mASL6
			03	016	mAIN7
			04	001	mAX8
			04	002	mASL9
			04	003	mBIN10
			04	004	mBX11
			04	005	mBSL12
			04	006	mBIN13
			04	007	mBX14
			04	008	mBSL15
			04	009	mBIN16
			04	010	mBX17
			04	011	mBSL18

IOT State - Controller connections (KOPMV)

KOPMV-IN			KOPMV-OUT		
Unit	Addr	*	Unit	Addr	*
=====	=====	=====	=====	=====	=====
05	001	C2F1	05	001	C1F2
05	002	C2F2	05	002	C1F5
05	003	C2F5	05	003	MOVAC1_ST1
05	004	MOVAC2_ST1	05	004	MOVAC1_ST2
05	005	MOVAC2_ST2			

INPUTS and OUTPUTS

Detectors

ID	Detector Name	Invert	Unit Type	Unit Pos.
1	AIN1	No	MTS4E-1	1
2	AX2	No	MTS4E-1	2
3	ASL3	No	MTS4E-1	3
4	AIN4	No	MTS4E-1	4
5	AX5	No	MTS4E-2	1
6	ASL6	No	MTS4E-2	2
7	AIN7	No	MTS4E-2	3
8	AX8	No	MTS4E-2	4
9	ASL9	No	MTS4E-3	1
10	BIN10	No	MTS4E-3	2
11	BX11	No	MTS4E-3	3
12	BSL12	No	MTS4E-3	4
13	BIN13	No	MTS4E-4	1
14	BX14	No	MTS4E-4	2
15	BSL15	No	MTS4E-4	3
16	BIN16	No	MTS4E-4	4
17	BX17	No	MTS4E-5	1
18	BSL18	No	MTS4E-5	2
19	BQ1	No	MTS4E-5	3
20	BQ2	No	MTS4E-5	4
21	CX1	No	MTS4E-9	1
22	CSL2	No	MTS4E-9	2
23	CIN3	No	MTS4E-9	3
24	CX4	No	MTS4E-9	4
25	CSL5	No	MTS4E-10	1
26	CX6	No	MTS4E-10	2
27	CSL7	No	MTS4E-10	3
28	DX8	No	MTS4E-10	4
29	DSL9	No	MTS4E-11	1
30	DIN10	No	MTS4E-11	2
31	DX11	No	MTS4E-11	3
32	DSL12	No	MTS4E-11	4
33	DIN13	No	MTS4E-12	1
34	DX14	No	MTS4E-12	2
35	DSL15	No	MTS4E-12	3
36	CX1_QUEUE	No	DUMMY-1	1

Inputs

ID	Input	Label	Invert	Toggle	Unit Type	Unit Pos.
1	UTC_I1	F1	No	No	IO1616-1	1
2	UTC_I2	F2	No	No	IO1616-1	2
3	UTC_I3	F3	No	No	IO1616-1	3
4	UTC_I4	DX1	No	No	IO1616-1	4
5	UTC_I5		No	No	-	0
6	UTC_I6		No	No	-	0
7	UTC_I7	FM	No	No	IO1616-1	5
8	UTC_I8	TS	No	No	IO1616-1	6
9	UTC_I9	SO	No	No	IO1616-1	7
10	UTC_I10		No	No	-	0
11	UTC_I11		No	No	-	0
12	UTC_I12		No	No	-	0
13	UTC_I13		No	No	-	0
14	UTC_I14		No	No	-	0

ID	Input	Label	Invert	Toggle	Unit Type	Unit Pos.
15	UTC_I15	T01	No	No	IO1616-1	8
16	UTC_I16	T02	No	No	IO1616-1	9
17	UTC_I17	F4	No	No	IO1616-1	10
18	UTC_I18	F5	No	No	IO1616-1	11
19	UTC_I19	F6	No	No	IO1616-1	12
20	UTC_I20	DX2	No	No	IO1616-1	13
21	UTC_I21		No	No	-	0
22	UTC_I22		No	No	-	0
23	UTC_I23		No	No	-	0
24	UTC_I24		No	No	-	0
25	UTC_I25		No	No	-	0
26	UTC_I26		No	No	-	0
27	UTC_I27		No	No	-	0
28	UTC_I28		No	No	-	0
29	UTC_I29		No	No	-	0
30	UTC_I30		No	No	-	0
31	UTC_I31		No	No	-	0
32	UTC_I32		No	No	-	0
33	DIM_IN		No	No	DIMMING	1

Outputs

ID	Output	Label	Invert	Unit Type	Unit Pos.	Intersection	SRM2 Only
1	mDET19		No	IO1616-2	5	0	No
2	mDET20		No	IO1616-2	6	0	No
3	mDET21		No	IO1616-2	7	0	No
4	mDET26		No	IO1616-2	8	0	No
5	mDET27		No	IO1616-2	9	0	No
6	mDET28		No	IO1616-2	10	0	No
7	mDET29		No	IO1616-2	11	0	No
8	mDET30		No	IO1616-2	12	0	No
9	mDET31		No	IO1616-2	13	0	No
10	mDET32		No	IO1616-2	14	0	No
11	mDET48		No	IO1616-2	15	0	No
12	mDET49		No	IO1616-2	16	0	No
13	mDET50		No	IO1616-3	1	0	No
14	mDET57		No	IO1616-3	2	0	No
15	mDET58		No	IO1616-3	3	0	No
16	mDET59		No	IO1616-3	4	0	No
17	mDET60		No	IO1616-3	5	0	No
18	mDET61		No	IO1616-3	6	0	No
19	mDET62		No	IO1616-3	7	0	No
20	mDET63		No	IO1616-3	8	0	No
21	mDET64		No	IO1616-3	9	0	No
22	mAIN1		No	IO1616-3	10	0	No
23	mAX2		No	IO1616-3	11	0	No
24	mASL3		No	IO1616-3	12	0	No
25	mAIN4		No	IO1616-3	13	0	No
26	mAX5		No	IO1616-3	14	0	No
27	mASL6		No	IO1616-3	15	0	No
28	mAIN7		No	IO1616-3	16	0	No
29	mAX8		No	IO1616-4	1	0	No
30	mASL9		No	IO1616-4	2	0	No
31	mBIN10		No	IO1616-4	3	0	No
32	mBX11		No	IO1616-4	4	0	No
33	mBSL12		No	IO1616-4	5	0	No
34	mBIN13		No	IO1616-4	6	0	No
35	mBX14		No	IO1616-4	7	0	No

ID	Output	Label	Invert	Unit Type	Unit Pos.	Intersection	SRM2 Only
36	mBSL15		No	IO1616-4	8	0	No
37	mBIN16		No	IO1616-4	9	0	No
38	mBX17		No	IO1616-4	10	0	No
39	mBSL18		No	IO1616-4	11	0	No
40	UTC_O1	G1	No	IO1616-1	1	0	No
41	UTC_O2	G2	No	IO1616-1	2	0	No
42	UTC_O3	G3	No	IO1616-1	3	0	No
43	UTC_O4	DF	No	IO1616-1	4	0	No
44	UTC_O5	LF11	No	IO1616-1	5	0	No
45	UTC_O6	LF12	No	IO1616-1	6	0	No
46	UTC_O7	FC	No	IO1616-1	7	0	No
47	UTC_O8	GR1	No	IO1616-1	8	0	No
48	UTC_O9	RR	No	IO1616-1	9	0	No
49	UTC_O10	CF	No	IO1616-1	10	0	No
50	UTC_O11	HC1	No	IO1616-1	11	0	No
51	UTC_O12		No	-	0	0	No
52	UTC_O13		No	-	0	0	No
53	UTC_O14		No	-	0	0	No
54	UTC_O15	CRB1	No	IO1616-1	12	0	No
55	UTC_O16	CRB2	No	IO1616-1	13	0	No
56	UTC_O17	G4	No	IO1616-1	14	0	No
57	UTC_O18	G5	No	IO1616-1	15	0	No
58	UTC_O19	G6	No	IO1616-1	16	0	No
59	UTC_O20	DF2	No	IO1616-2	1	0	No
60	UTC_O21	LF21	No	IO1616-2	2	0	No
61	UTC_O22	LF22	No	IO1616-2	3	0	No
62	UTC_O23	HC2	No	IO1616-2	4	0	No
63	UTC_O24		No	-	0	0	No
64	UTC_O25		No	-	0	0	No
65	UTC_O26		No	-	0	0	No
66	UTC_O27		No	-	0	0	No
67	UTC_O28		No	-	0	0	No
68	UTC_O29		No	-	0	0	No
69	UTC_O30		No	-	0	0	No
70	UTC_O31		No	-	0	0	No
71	UTC_O32		No	-	0	0	No
72	DIM_OUT		No	DIMMING	1	0	No

Report executed at 2/15/2022 11:42 AM

Project data

Project	M1/J22 Controller 2 SB
Program date	11-12-2020
Version	2
Programmer	Simon Wakeling
Country	UK
City	Leicester
Street1	M1
Street2	J22
Controller type	PTC1-TR2500A
Controller board	EC2 16 Mb RAM
Controller Serial number	Hardware Serial No.
Report created at	2/15/2022 11:51 AM
Database filename (.cpf)	M1_J22_SB_V3.cpf
Configurator version	12.0.2.0

Configuration Notes
Version 2 11/12/2020 SW Added UTC interface and PSVP mode for MOVA 15/02/22 Edited timetable entries 2 and 3 Edited CLF plans 1 and 3 Edited event pulses 9 and 13

FACILITIES MODES AND PRIORITIES

FACILITIES

Facility	Enabled
Manual Control	Yes
Manual Step On Mode	No
CLF	Yes
UTC Facility	Yes
Hurry Call Mode	No
Priority	No
MOVA via UTC TO bits	Yes
MOVA M-inputs / PSVP	No

Hurry call (high priority) options

Use hurry call (high priority) mode for all red moves:	Yes
Part Time shutdown HC priority movements required:	No

MODES AND PRIORITY

Mode	PRIO	Dem. set leave	Dem. set enter
Hurry call (high priority)	1	-	-
Urban Traffic Control (UTC)	5	-	-
Hurry call (std priority)	2	-	-
Manual control	3	Start-up demand set	-
Cableless linking facility (CLF)	7	-	-
Vehicle actuated (VA)	8	-	-
Simple fix time (FT)	-	Start-up demand set	-
Public service vehicle priority	6	-	-
Selected cableless linking	4	-	-
Selected vehicle actuated	4	-	-
Selected fix time	-	Start-up demand set	-
ImFlow control	-	-	-
	-	-	-

Revertive Demand Sets

Phase	Type	RDC	Start-up	2	3	4	5	6	7	8
A	802 T: vehicle	A	Yes	No	No	No	No	No	No	No
B	802 T: vehicle	B	Yes	No	No	No	No	No	No	No
C	802 T: vehicle	C	Yes	No	No	No	No	No	No	No
D	802 T: vehicle	D	Yes	No	No	No	No	No	No	No
E	Dummy	-	No	No	No	No	No	No	No	No
F	Dummy	-	No	No	No	No	No	No	No	No

STREAMS AND STAGES

STREAM

ID	Name	Type
1	STREAM1	Junction
2	STREAM2	Junction

STAGE

ID	Description	Stream No.	Demands AFTER Min Exp.	Demands BEFORE Min Exp.	Ripple Change	Startup stage	Arterial reversion stage	Switch off stage	All Red stage
1	STAGE1	1	No	Yes	No	Yes	No	No	No
2	STAGE2	1	No	Yes	No	No	No	No	No
3	ALLRED	1	No	Yes	No	No	No	Yes	Yes
4	STAGE4	2	No	Yes	No	Yes	No	No	No
5	STAGE5	2	No	Yes	No	No	No	No	No
6	ALLRED	2	No	Yes	No	No	No	Yes	Yes

Phases in stages

	A	B	C	D	E	F
1	X	-	-	-	-	-
2	-	X	-	-	-	-
3	-	-	-	-	X	-
4	-	-	X	-	-	-
5	-	-	-	X	-	-
6	-	-	-	-	-	X

PHASES

Types

Phase	Site Phase	Description	Type	Associated Phase
A	A	Eastbound circulating to Leicester	802 T: vehicle	-
B	B	Southbound off slip from North	802 T: vehicle	-
C	C	Southbound circulating to M1 South	802 T: vehicle	-
D	D	A50 to Coalville	802 T: vehicle	-
E	E	Dummy - O/N revert - Stream 1	Dummy	-
F	F	Dummy - O/N revert - Stream 2	Dummy	-

CONDITIONS

Phase	Tactile Interlock	Appearance type	Termination type
A	No	Always	At end of stage
B	No	Always	At end of stage
C	No	Always	At end of stage
D	No	Always	At end of stage
E	No	Always	At end of stage
F	No	Always	At end of stage

TIMINGS

Phase	Type	Min green	Min red	Start Amber	Amber	Ped Period V	Ped Period VI	Ped Period VII	Ped Period VIII	Pre-time max
A	802 T: vehicle	7	1	2	3					No
B	802 T: vehicle	7	1	2	3					No
C	802 T: vehicle	7	1	2	3					No
D	802 T: vehicle	7	1	2	3					No
E	Dummy	4	1							No
F	Dummy	4	1							No

Note: Use of zero second blackout Ped Perod 5 on Type 814 PD: is not current DfT policy and should be discouraged

PHASE GREEN TIMING RANGES

PHASE	MIN Lower Limit	MIN Upper Limit	MAX Lower Limit	MAX Upper Limit
A	5	30	0	120
B	5	30	0	120
C	5	30	0	120
D	5	30	0	120
E	0	30	0	120
F	0	30	0	120

PHASE TIMING SETS

Regular maximums

	1	2	3	4
A	33	18	21	16
B	17	12	14	12
C	23	16	13	16
D	27	18	22	12
E				
F				

Alternative maximums

	1	2	3	4
A				
B				
C				
D				
E				
F				

Variable blackout/red periods

	1	2	3	4
A				
B				
C				
D				
E				
F				

Minimum green

	1	2	3	4
A				
B				
C				
D				
E				
F				

PSVP inhibition times

	1	2	3	4
A				
B				
C				
D				
E				
F				

PSVP maximum green times

	1	2	3	4
A				
B				

	1	2	3	4
C				
D				
E				
F				

PHASE MATRICES

Settings

Starting intergreen	Handset maximum	Flashing Amber	All Red
8	30	0	0

Handset Int Offset	Default RLM Int	
0	2	

Opposing and conflicting

	A	B	C	D	E	F
A	-	C	-	-	C	-
B	C	-	-	-	C	-
C	-	-	-	C	-	C
D	-	-	C	-	-	C
E	C	C	-	-	-	-
F	-	-	C	C	-	-

Intergreen times

	A	B	C	D	E	F
A		6			3	
B	6				3	
C				6		3
D			6			3
E	2	2				
F			2	2		

Handset intergreen limits

	A	B	C	D	E	F
A		5			3	
B	5				3	
C				5		3
D			5			3
E	2	2				
F			2	2		

RLM additional intergreens

	A	B	C	D	E	F
A						
B						
C						
D						
E						
F						

RLM phase inhibits

	A	B	C	D	E	F
A	-	-	-	-	-	-
B	-	-	-	-	-	-
C	-	-	-	-	-	-
D	-	-	-	-	-	-
E	-	-	-	-	-	-

	A	B	C	D	E	F
F	-	-	-	-	-	-

LAMP MONITORING

Applied sensing technology

Individual Monitoring Channels Used for RLUs ?	No
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Lamp Switches

Phase	Type	SWR	SWA	SWG	SWWL
A	802 T: vehicle	R01	A01	G01	
B	802 T: vehicle	R02	A02	G02	
C	802 T: vehicle	R03	A03	G03	
D	802 T: vehicle	R04	A04	G04	
E	Dummy				
F	Dummy				

Phase Lamp Types

Phase	Description	Type	Red	Amber	Green	Wait
A	Eastbound circulating to Leicester	T	T-LED 230	T-LED 230	T-LED 230	-
B	Southbound off slip from North	T	T-LED 230	T-LED 230	T-LED 230	-
C	Southbound circulating to M1 South	T	T-LED 230	T-LED 230	T-LED 230	-
D	A50 to Coalville	T	T-LED 230	T-LED 230	T-LED 230	-
E	Dummy - O/N revert - Stream 1	-	-	-	-	-
F	Dummy - O/N revert - Stream 2	-	-	-	-	-

Lamp Monitor Settings

Phase	Description	Red 1	Red 2	Amber	Green
A	Eastbound circulating to Leicester	Maintenance	None	Maintenance	Maintenance
B	Southbound off slip from North	Maintenance	None	Maintenance	Maintenance
C	Southbound circulating to M1 South	Maintenance	None	Maintenance	Maintenance
D	A50 to Coalville	Maintenance	None	Maintenance	Maintenance
E	Dummy - O/N revert - Stream 1	None	None	None	None
F	Dummy - O/N revert - Stream 2	None	None	None	None

Safety Lamp Monitor Shutdown Action

Phase	Description	Red 1	Red 2	Amber
A	Eastbound circulating to Leicester	None	None	None
B	Southbound off slip from North	None	None	None
C	Southbound circulating to M1 South	None	None	None
D	A50 to Coalville	None	None	None
E	Dummy - O/N revert - Stream 1	None	None	None
F	Dummy - O/N revert - Stream 2	None	None	None

PHASE DELAYS

FIXED TIME

FIXED TIME TO CURRENT MAXIMUM

STREAM	Fixed
STREAM1	No
STREAM2	No

Phase	Demand	Extend
A	No	No
B	No	No
C	No	No
D	No	No
E	No	No
F	No	No

STAGE MOVES

Move sets

Mode	SET
Hurry call (high priority)	1
Urban Traffic Control (UTC)	2
Hurry call (std priority)	1
Manual control	1
Cableless linking facility (CLF)	1
Vehicle actuated (VA)	1
Simple fix time (FT)	1
Public service vehicle priority	1

Set 1

	1	2	3	4	5	6
1	-	A	A	-	-	-
2	A	-	A	-	-	-
3	A	A	-	-	-	-
4	-	-	-	-	A	A
5	-	-	-	A	-	A
6	-	-	-	A	A	-

Set 2

	1	2	3	4	5	6
1	-	A	P	-	-	-
2	A	-	P	-	-	-
3	A	A	-	-	-	-
4	-	-	-	-	A	P
5	-	-	-	A	-	P
6	-	-	-	A	A	-

Set 3

	1	2	3	4	5	6
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-

Set 4

	1	2	3	4	5	6
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-

Set 5

	1	2	3	4	5	6
1	-	-	-	-	-	-

	1	2	3	4	5	6
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-

Set 6

	1	2	3	4	5	6
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-

Set 7

	1	2	3	4	5	6
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-

Set 8

	1	2	3	4	5	6
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-

MANUAL STAGE SELECTION

	1	2
But 1	1	4
But 2	2	4
But 3	1	5
But 4	-	-
But 5	-	-
But 6	-	-
But 7	-	-
But 8	-	-
But 9	-	-
But 10	-	-
But 11	-	-
But 12	-	-
But 13	-	-
But 14	-	-
But 15	-	-
But 16	-	-

Detectors

Application

ID	Detector	Type	Phase	Call	Cancel	Extend	Associated Det	DEM	CANCEL
1	AIN1	Vehicle loop	A	20	5	3.5	-	No	No
2	AX2	Vehicle loop	A			4	-	Yes	No
3	ASL3	Vehicle loop	A			1.6	-	Yes	No
4	AIN4	Vehicle loop	A	20	5	3.5	-	No	No
5	AX5	Vehicle loop	A			4	-	Yes	No
6	ASL6	Vehicle loop	A			1.6	-	Yes	No
7	BIN7	Vehicle loop	B	20	5	3	-	No	No
8	BX8	Vehicle loop	B			4	-	Yes	No
9	BSL9	Vehicle loop	B			1.6	-	Yes	No
10	BX10	Vehicle loop	B			4	-	Yes	No
11	BSL11	Vehicle loop	B			1.6	-	Yes	No
12	BIN12	Vehicle loop	B	20	5	3.5	-	No	No
13	BX13	Vehicle loop	B			4	-	Yes	No
14	BSL14	Vehicle loop	B			1.6	-	Yes	No
15	BQ1	Vehicle loop	-	10	5		-	No	No
16	BQ2	Vehicle loop	-	10	5		-	No	No
17	CX1	Vehicle loop	C			4	-	Yes	No
18	CSL2	Vehicle loop	C			1.6	-	Yes	No
19	CIN3	Vehicle loop	C	20	5	3.5	-	No	No
20	CX4	Vehicle loop	C			4	-	Yes	No
21	CSL5	Vehicle loop	C			1.6	-	Yes	No
22	CX6	Vehicle loop	C			4	-	Yes	No
23	CSL7	Vehicle loop	C			1.6	-	Yes	No
24	DIN8	Vehicle loop	D	20	5	3.5	-	No	No
25	DX9	Vehicle loop	D			4	-	Yes	No
26	DSL10	Vehicle loop	D			1.6	-	Yes	No
27	DX11	Vehicle loop	D			4	-	Yes	No
28	DSL12	Vehicle loop	D			1.6	-	Yes	No
29	DIN13	Vehicle loop	D	20	5	3.5	-	No	No
30	DX14	Vehicle loop	D			4	-	Yes	No
31	DSL15	Vehicle loop	D			1.6	-	Yes	No
32	CX1_Q	-	-	20	5		-	No	Yes

Detector Fault Monitoring

[illegible]

[illegible]

IMFLOW

Enable ImFlow	Log to TDC
No	No

Settings

Wait time on deadlock (s)	Retries on UTC deadlock	Retries on UTC conflict
300	5	1

CONFLICT EXTENSION RED

CABLELESS LINKING FACILITY

Global settings

Setting	Value
Sync. Mode	Daily
Sync. Day	Monday
Ref. time	05:00

Plans

Plan No	Cycle	Offset	Cycle EntryTime	Cycle ExitTime
1	60	0		
2	40	0		
3	60	0		
4	30	0		

Functions and actions

PLAN 1

Action No	Time	Influence	Stage	Stream
1	0	IM: Immediate move	2	1
2	0	IM: Immediate move	4	2
3	19	IM: Immediate move	1	1
4	36	IM: Immediate move	5	2

PLAN 2

Action No	Time	Influence	Stage	Stream
1	2	IM: Immediate move	5	2
2	18	IM: Immediate move	1	1
3	26	IM: Immediate move	4	2
4	38	IM: Immediate move	2	1

PLAN 3

Action No	Time	Influence	Stage	Stream
1	3	IM: Immediate move	1	1
2	19	IM: Immediate move	5	2
3	45	IM: Immediate move	2	1
4	45	IM: Immediate move	4	2

PLAN 4

Action No	Time	Influence	Stage	Stream
1	1	IM: Immediate move	4	2
2	7	IM: Immediate move	1	1
3	19	IM: Immediate move	5	2
4	25	IM: Immediate move	2	1

OTU

Units

General Integral OTU options

Discrete OTU

ID	Invert control bits	Invert reply bits
1	No	Yes
2	No	Yes

Control and reply bits

Control / Reply

Function	Arg	Label	Position ID	Label	Arg	Function
F	1	F1	1	G1	1	G
F	2	F2	2	G2	2	G
F	3	F3	3	G3	3	G
DX	1	DX1	4	DF1	1	FLOG
-	0		5	LF11	3	UF
-	0		6	LF12	4	UF
FM	1	FM	7	FC	0	FC
TS	0	TS	8	GR1	1	GR1
SO	0	SO	9	RR	1	RR
-	0		10	CF	0	CF
-	0		11	HC1	0	H
-	0		12		0	-
-	0		13		0	-
-	0		14		0	-
SF	1	TO1	15	CRB1	1	UF
SF	2	TO2	16	CRB2	2	UF
F	4	F4	17	G4	4	G
F	5	F5	18	G5	5	G
F	6	F6	19	G6	6	G
DX	2	DX2	20	DF2	2	FLOG
-	0		21	LF21	5	UF
-	0		22	LF22	6	UF
-	0		23	HC2	1	H
-	0		24		0	-
-	0		25		0	-
-	0		26		0	-
-	0		27		0	-
-	0		28		0	-
-	0		29		0	-
-	0		30		0	-
-	0		31		0	-
-	0		32		0	-

UTC Demand/Extend bits - Phases/Stages allocation

Bit	Phases Demanded	Phases Extended	Stages Demanded	Stages Extended
DX 1	A, B	A, B		
DX 2	C, D	C, D		

Keep default Demand reply options

Default Stage Demand (SD) reply	No
Default Phase Demand (DR) reply	No

RTC

Synchronisation time (UTC TS input)	12:00
Confirm time (UTC RT output)	0:0:0

Special UTC Reply bits

	G1/G2	RR
Manual mode operative	Yes	Yes
Manual mode selected	Yes	Yes
No lamp power (excluding RLM and PT)	Yes	n/a
Normal not selected on the manual panel	No	Yes

CG reply bit weekday-coded	No
----------------------------	----

UG405 bit mapping

Settings

Enable UG405	No
OTU System Code Number (SCN)	

Control / Reply

ID	Label	Controller SCN	UG405 Name	Bit Index	Label	Controller SCN	UG405 name	Bit index
1	F1		-		G1		-	
2	F2		-		G2		-	
3	F3		-		G3		-	
4	DX1		-		DF1		-	
5			-		LF11		-	
6			-		LF12		-	
7	FM		-		FC		-	
8	TS		-		GR1		-	
9	SO		-		RR		-	
10			-		CF		-	
11			-		HC1		-	
12			-				-	
13			-				-	
14			-				-	
15	TO1		-		CRB1		-	
16	TO2		-		CRB2		-	
17	F4		-		G4		-	
18	F5		-		G5		-	
19	F6		-		G6		-	
20	DX2		-		DF2		-	
21			-		LF21		-	
22			-		LF22		-	
23			-		HC2		-	
24			-				-	
25			-				-	
26			-				-	
27			-				-	
28			-				-	
29			-				-	
30			-				-	
31			-				-	
32			-				-	

HURRY CALLS

ID	Description	Target Stage	Delay (s)	Hold (s)	Prevent (s)	Call Rising Edge
1	Hurry Call 1	2	0	20	180	Yes

PUBLIC SERVICE VEHICLE PRIORITY

SPEED ASSESSMENT AND SPEED DISCRIMINATION

APPLICATION BUILDING BLOCKS

Software Switches (User Parameters)

ID	Name	Default	Min Value	Max Value
1	mDET27_SW	0	0	1
2	mDET28_SW	0	0	1
3	mDET29_SW	0	0	1
4	mDET30_SW	0	0	1
5	mDET57_SW	0	0	1
6	mDET58_SW	0	0	1
7	mDET59_SW	0	0	1
8	mDET60_SW	0	0	1
9	mDET61_SW	0	0	1
10	mDET62_SW	0	0	1

Event Pulses

ID	Name	Type	Input Type	On	OFF
1	CRB1	Wave	Level	2	600
2	CRB2	Wave	Level	2	600
3	Mdet27_Pulse	Pulse	Rising edge	8	2
4	Mdet28_Hold	Level	Level	10	8
5	Mdet28_OR	Level	Level	60	0
6	Mdet29_Pulse	Pulse	Rising edge	8	2
7	Mdet30_Hold	Level	Level	10	8
8	Mdet30_OR	Level	Level	60	0
9	Mdet57_Pulse	Pulse	Rising edge	12	2
10	Mdet58_Hold	Level	Level	10	8
11	Mdet58_OR	Level	Level	60	0
12	Mdet59_Pulse	Pulse	Rising edge	8	2
13	Mdet60_Hold	Level	Level	8	6
14	Mdet60_OR	Level	Level	60	0
15	Mdet61_Pulse	Pulse	Rising edge	8	2
16	Mdet62_Hold	Level	Level	10	8
17	Mdet62_OR	Level	Level	60	0
18	Nodemand_ST1	Level	Level	15	0
19	Nodemand_ST2	Level	Level	15	0
20	Det31_32_pulse	Pulse	Rising edge	0	2
21	Det63_64_pulse	Pulse	Rising edge	0	2
22	PulseGR1xpl	Pulse	Rising edge	0	3
23	MOVA_Running	Wave	Level	0.5	0.5

Event Pulse Input Conditioning
evp1() = (macm(0)>1) && (stgc(0)!=0) && mpauto(0) && (mUTC(0)==0) && (mPSVP(0)==0); evp2() = (macm(1)>1) && (stgc(1)!=0) && mpauto(1) && (mUTC(1)==0) && (mPSVP(1)==0); evp3() = get(h_xkopmvi5_csc,KOPMVI5_C1F2); evp4() = get(h_xkopmvi5_csc,KOPMVI5_C1F2); evp5() = get(h_xkopmvi5_csc,KOPMVI5_C1F2); evp6() = get(h_xkopmvi5_csc,KOPMVI5_C1F5); evp7() = get(h_xkopmvi5_csc,KOPMVI5_C1F5); evp8() = get(h_xkopmvi5_csc,KOPMVI5_C1F5); evp9() = get(h_xkopmvi5_csc,KOPMVI5_C1F5); evp10() = get(h_xkopmvi5_csc,KOPMVI5_C1F5);

Event Pulse Input Conditioning

```
evp11() = get(h_xkopmvi5_csc,KOPMVI5_C1F5);  
  
evp12() = uF(1);  
  
evp13() = uF(1);  
  
evp14() = uF(1);  
  
evp15() = uF(2);  
  
evp16() = uF(2);  
  
evp17() = uF(2);  
  
evp18() = not(dr(A) || dr(B) || ngp1(A) || ngp1(B));  
  
evp19() = not(dr(C) || dr(D) || ngp1(C) || ngp1(D));  
  
evp20() = evp(18);  
  
evp21() = evp(19);  
  
evp22() = clfg1(0);  
  
evp23() = mPSVP(0) || mPSVP(1);
```

Event Filter Input Conditioning

SPECIAL CONDITIONING - (VM Functions)

O.T.U. Control & Reply Bit Special Conditioning
<pre>rf_2(arg) = cfa; rf_11(arg) if (arg==1) then return evp(22); endif return 0; end rf_28(arg) if (arg == 1) then return (dr(A) dr(B) er(A) er(B)); endif if (arg == 2) then return (dr(C) dr(D) er(C) er(D)); endif return FALSE; end rf_32(arg) if (arg==3) then return rf1(0) rf1(1); endif if (arg==4) then return rf2(0) rf2(1); endif if (arg==1) then return ((mpauto(0) && (((mPSVP(0) evp(CRB1)) && (mUTC(0)==0)) (in(utciTO1) && ufac(0)))) != 1); endif if (arg==2) then return ((mpauto(1) && (((mPSVP(1) evp(CRB2)) && (mUTC(1)==0)) (in(utciTO2) && ufac(1)))) != 1); endif if (arg==5) then return rf1(2) rf1(3); endif if (arg==6) then return rf2(2) rf2(3); endif return 0; end rf_34(arg) = (macm(xp) != 6); rf_40(arg) = mPSVP(xp); urG1() = (stgc(0)==1) && (stgr(0,0,0)); urDR1() = dr(A); urG2() = (stgc(0)==2) && (stgr(0,0,0)); urDR2() = dr(B); urG3() = (stgc(0)==3) && (stgr(0,0,0)); urDR3() = dr(E); urG4() = (stgc(1)==4) && (stgr(1,0,0)); urDR4() = dr(C); urG5() = (stgc(1)==5) && (stgr(1,0,0)); urDR5() = dr(D); urG6() = (stgc(1)==6) && (stgr(1,0,0)); urDR6() = dr(F);</pre>

Integral O.T.U. Special Conditioning
<pre>otu_dstate(d) = get(h_xdet_sts, d) & DET_BEZET_MASK; otu_dfault(d) = get(h_xdet_sts, d) & DET_FAULT_MASK; otu_dcnt(d) = get(h_xdet_cnt, d);</pre>

U.T.C. (G1/G2) Special Conditioning**CLF Request & Inhibit Special Conditioning****P.S.V.P. Pre Check-in, Check-in & Check-out Special Conditioning****Hurry Call Delay, Force, Demand & Inhibit Special Conditioning**

```
ihc() = mUTC(0) || mPSVP(0);

hclr() = ddro(BQ1) || ddro(BQ2);

hclf() = (stgc(0)== 2) && (stgr(0,0,0)) || (stgc(1)== 4) && (stgr(1,0,0));
```

Phase Delay Appearance Special Conditioning**Stream On/Off Control Special Conditioning**

```
roffsync() = okoff(0) && okoff(1);

mac1_swon(t) = yellow_period(0,t);

macon1() = (minon(xp)==0);

macoff1() = ((macm(xp) <= 1) && (mact(xp) <= tson(7)));

mac2_swon(t) = yellow_period(1,t);

macon2() = (minon(xp)==0);

macoff2() = ((macm(xp) <= 1) && (mact(xp) <= tson(7)));
```

Detector Count Activity Window Special Conditioning

```
nokbs()

var det;
for det=0 to (nrel(h_dfunc) -1) do
  if ddo(det) && (fcteg(get(h_dsg,det))>0) && (ddr(det)!=1) && (get(h_dfunc,det)==25) then
    put(h_dfunc,det,65);
  endif
  if (get(h_dfunc,det)==65) && (((ddo(det) || (dr(get(h_dsg,det))))!=1) || fcg(get(h_dsg,det))) then
    put(h_dfunc,det,25);
  endif
endfor
end
```

Phase Control Special Conditioning

```
latch(ph) = dx(ph) && (fcg(ph)==0);

pd_ALL(ph)

if ((xsf(XSF_PSET_ERR) != AUTOSET_STATE_DONE) && (xsf(XSF_PSET_ERR) != AUTOSET_STATE_ERROR)) then return (1); endif
end

pe_ALL(ph) = ngp1(ph);

pd_A() = uDX(0) || pd_ALL(A) || latch(A);
```

Phase Control Special Conditioning

```
pe_A() = uDX(0) || pe_ALL(A);

pd_B() = uDX(0) || pd_ALL(B) || latch(B);

pe_B() = uDX(0) || pe_ALL(B);

pd_C() = uDX(1) || pd_ALL(C) || latch(C);

pe_C() = uDX(1) || pe_ALL(C);

pd_D() = uDX(1) || pd_ALL(D) || latch(D);

pe_D() = uDX(1) || pe_ALL(D);
```

Phase Timing Set Selection Special Conditioning

Dummy Detector Special Conditioning

```
vmDET_CX1_Q() = ddo(CX1);
```

Mode Control Special Conditioning

```
rHCH() = rar(xp);

rUTC()
if (xp==0) then
return (in(UTC_I1) || in(UTC_I2) || in(UTC_I3)) && (in(UTC_I15)==0);
endif

if (xp==1) then
return (in(UTC_I17) || in(UTC_I18) || in(UTC_I19)) && (in(UTC_I16)==0);
endif
return ufav(xp)||ufpv(xp);
end

rHCL()
if (xp==0) then
return hfhn(1);
endif
return 0;
end

rMAN() = mpman(xp);

rCLF()

if (xp==0) then
return clfp && clfv(xp,clfp) && (clfi == 0);
endif
if (xp==1) then
return clfp && clfv(xp,clfp) && (clfi == 0);
endif
end

rVA() = 1;

rPSVP()
if (xp==0) then
return (in(UTC_I1) || in(UTC_I2) || in(UTC_I3)) && in(UTC_I15);
endif
if (xp==1) then
return (in(UTC_I17) || in(UTC_I18) || in(UTC_I19)) && in(UTC_I16);
endif
end

rSCLF() = (clfp && (mpclf(xp) || clfmp)) || mpft(xp);

rSVA() = mpva(xp);

tlcfa_ImFlow_ouerrule(a) = ouerruleIMFLOW(a); /* Check whether ImFlow is currently ouerruled */
```

All Red Detection Operation Special Conditioning

Manual Panel Stage LED Conditions

```
MpStageLEDsNoDefault()  
mpdiso(20,1);  
mpdiso(21,1);  
mpdiso(22,1);  
mpdiso(23,1);  
mpdiso(24,1);  
mpdiso(25,1);  
mpdiso(26,1);  
mpdiso(27,1);  
mpdiso(28,1);  
mpdiso(29,1);  
mpdiso(30,1);  
mpdiso(31,1);  
mpdiso(32,1);  
mpdiso(33,1);  
mpdiso(34,1);  
mpdiso(35,1);  
end
```

```
DriveMpStageLEDs()  
MpStageLEDsNoDefault();  
mpledfunc20();  
mpledfunc21();  
mpledfunc22();  
mpledfunc23();  
mpledfunc24();  
mpledfunc25();  
mpledfunc26();  
mpledfunc27();  
mpledfunc28();  
mpledfunc29();  
mpledfunc30();  
mpledfunc31();  
mpledfunc32();  
mpledfunc33();  
mpledfunc34();  
mpledfunc35();  
end
```

```
mpledfunc20() = cmled(20,(stgc(0)==1)*(2-stgr(0,1,0)));
```

```
mpledfunc21() = cmled(21,(stgc(0)==2)*(2-stgr(0,1,0)));
```

```
mpledfunc22() = cmled(22,(stgc(0)==3)*(2-stgr(0,1,0)));
```

```
mpledfunc23() = cmled(23,(stgc(1)==4)*(2-stgr(1,1,0)));
```

```
mpledfunc24() = cmled(24,(stgc(1)==5)*(2-stgr(1,1,0)));
```

```
mpledfunc25() = cmled(25,(stgc(1)==6)*(2-stgr(1,1,0)));
```

```
mpledfunc26() = 0;
```

```
mpledfunc27() = 0;
```

```
mpledfunc28() = 0;
```

```
mpledfunc29() = 0;
```

```
mpledfunc30() = 0;
```

```
mpledfunc31() = 0;
```

```
mpledfunc32() = 0;
```

```
mpledfunc33() = 0;
```

```
mpledfunc34() = 0;
```

```
mpledfunc35() = 0;
```


Initialisation & General Special Conditioning

```
init()  
open_handles();  
return 1;  
end  
  
dfm_f() = sf1(-1) || fci(-1);
```

User Defined VM Functions

```
post_100ms()  
Mova_Outputs();  
Leds();  
XKOP_Outputs();  
resetmax();  
  
end  
  
Mova_Outputs()  
cout(mDET15,ddro(AIN1) || ddro(AIN4));  
cout(mDET16,ddro(BIN7) || ddro(BIN12));  
cout(mDET17,ddro(BQ1) || ddro(BQ2));  
cout(mDET27,evp(3) && UP(0));  
cout(mDET28,evp(4) && (evp(5)==0) && UP(1));  
cout(mDET29,evp(6) && UP(2));  
cout(mDET30,evp(7) && (evp(8)==0) && UP(3));  
cout(mDET31,evp(20) && mtcf(7));  
cout(mDET32,evp(20) && (mtcf(7)==0));  
cout(mDET48,ddro(CX1_Q));  
cout(mDET49,ddro(CIN3));  
cout(mDET50,ddro(DIN8) || ddro(DIN13));  
cout(mDET57,evp(9) && UP(4));  
cout(mDET58,evp(10) && (evp(11)==0) && UP(5));  
cout(mDET59,evp(12) && UP(6));  
cout(mDET60,evp(13) && (evp(14)==0) && UP(7));  
cout(mDET61,evp(15) && UP(8));  
cout(mDET62,evp(16) && (evp(17)==0) && UP(9));  
cout(mDET63,evp(21) && mtcf(7));  
cout(mDET64,evp(21) && (mtcf(7)==0));  
cout(T_SYNC,evp(20));  
cout(MOVA_ST1,mUTC(0));  
cout(MOVA_ST2,mUTC(1));  
cout(mAIN1,ddo(AIN1));  
cout(mAX2,ddo(AX2));  
cout(mASL3,ddo(ASL3));  
cout(mAIN4,ddo(AIN4));  
cout(mAX5,ddo(AX5));  
cout(mASL6,ddo(ASL6));  
cout(mBIN7,ddo(BIN7));  
cout(mBX8,ddo(BX8));  
cout(mBSL9,ddo(BSL9));  
cout(mBX10,ddo(BX10));  
cout(mBSL11,ddo(BSL11));  
cout(mBIN12,ddo(BIN12));  
cout(mBX13,ddo(BX13));  
cout(mBSL14,ddo(BSL14));  
end  
  
Leds()  
cmled(0,get(h_xkopmvi5_csc,KOPMVI5_MOVAC1_ST1));  
cmled(1,get(h_xkopmvi5_csc,KOPMVI5_MOVAC1_ST2));  
cmled(2,mUTC(0));  
cmled(3,mUTC(1));  
cmled(4,out(mDET15));  
cmled(5,out(mDET16) || out(mDET17));  
mpdiso(13,1);  
cmled(13,(mUTC(0) || mUTC(1) || (evp(MOVA_Running)==1));  
cmled(18,3*(xsf(60)==0));  
cmled(6,(mPSVP(0) && (in(utciTO1)==1)));  
cmled(7,(mPSVP(1) && (in(utciTO2)==1)));  
mpdiso(9,1);  
cmled(9, mVA(xp));  
mpdiso(11,1);  
cmled(11,(mCLF(0) || mCLF(1)));  
end  
  
XKOP_Outputs()  
put(h_xkopmvo5_csc,KOPMVO5_C2F1,uF(1));  
put(h_xkopmvo5_csc,KOPMVO5_C2F2,uF(2));  
put(h_xkopmvo5_csc,KOPMVO5_C2F5,uF(5));
```

User Defined VM Functions

```
put(h_xkopmvo5_csc,KOPMVO5_MOVAC2_ST1,mUTC(0));  
put(h_xkopmvo5_csc,KOPMVO5_MOVAC2_ST2,mUTC(1));  
end
```

```
resetmax()  
if dr(B) then  
  rmx(A,0);  
else  
  rmx(A,1);  
endif
```

```
if dr(C) then  
  rmx(D,0);  
else  
  rmx(D,1);  
endif  
end
```

Stage Moves

Hurry Call High Mode - HCH (Normally for Part Time / Prom Swap Facility)
mHCH1_3d() = rar(xp); mHCH2_3d() = rar(xp); mHCH4_6d() = rar(xp); mHCH5_6d() = rar(xp);

Hurry Call Standard Mode - HCL
mHCL1_2d() = hfhn(1); mHCL1_3d() = FALSE; mHCL2_3d() = FALSE; mHCL2_1d() = FALSE; mHCL3_1d() = FALSE; mHCL3_2d() = hfhn(1); mHCL4_5d() = FALSE; mHCL4_6d() = FALSE; mHCL5_6d() = FALSE; mHCL5_4d() = FALSE; mHCL6_4d() = FALSE; mHCL6_5d() = FALSE;

Vehicle Actuated Mode - VA
mVA1_2d() = dr(B); mVA1_2e() = er(A); mVA1_2i() = FALSE; mVA1_3d() = evp(18) && (mtcf(7)==0); mVA1_3e() = er(A); mVA1_3i() = FALSE; mVA2_3d() = evp(18) && (mtcf(7)==0); mVA2_3e() = er(B); mVA2_3i() = FALSE; mVA2_1d() = dr(A) evp(18) && mtcf(7); mVA2_1e() = er(B); mVA2_1i() = FALSE; mVA3_1d() = dr(A) evp(18) && mtcf(7); mVA3_1e() = dSTGe(3, 1); mVA3_1i() = FALSE; mVA3_2d() = dr(B); mVA3_2e() = dSTGe(3, 2); mVA3_2i() = FALSE; mVA4_5d() = dr(D);

Vehicle Actuated Mode - VA

```
mVA4_5e() = er(C);

mVA4_5i() = FALSE;

mVA4_6d() = evp(19) && (mtcf(7)==0);

mVA4_6e() = er(C);

mVA4_6i() = FALSE;

mVA5_6d() = evp(19) && (mtcf(7)==0);

mVA5_6e() = er(D);

mVA5_6i() = FALSE;

mVA5_4d() = dr(C) || (evp(19) && mtcf(7));

mVA5_4e() = er(D);

mVA5_4i() = FALSE;

mVA6_4d() = dr(C) || (evp(19) && mtcf(7));

mVA6_4e() = dSTGe(6, 4);

mVA6_4i() = FALSE;

mVA6_5d() = dr(D);

mVA6_5e() = dSTGe(6, 5);

mVA6_5i() = FALSE;
```

Fixed Time Mode - FT

Cableless Linking Mode - CLF

```
mCLF1_2d() = dCLFd(1, 2);

mCLF1_2i() = dCLFi(1, 2);

mCLF1_3d() = dCLFd(1, 3);

mCLF1_3i() = dCLFi(1, 3);

mCLF2_3d() = dCLFd(2, 3);

mCLF2_3i() = dCLFi(2, 3);

mCLF2_1d() = dCLFd(2, 1);

mCLF2_1i() = dCLFi(2, 1);

mCLF3_1d() = dCLFd(3, 1);

mCLF3_1i() = dCLFi(3, 1);

mCLF3_2d() = dCLFd(3, 2);

mCLF3_2i() = dCLFi(3, 2);

mCLF4_5d() = dCLFd(4, 5);

mCLF4_5i() = dCLFi(4, 5);

mCLF4_6d() = dCLFd(4, 6);

mCLF4_6i() = dCLFi(4, 6);

mCLF5_6d() = dCLFd(5, 6);

mCLF5_6i() = dCLFi(5, 6);

mCLF5_4d() = dCLFd(5, 4);

mCLF5_4i() = dCLFi(5, 4);
```

Cableless Linking Mode - CLF

```
mCLF6_4d() = dCLFd(6, 4);  
  
mCLF6_4i() = dCLFi(6, 4);  
  
mCLF6_5d() = dCLFd(6, 5);  
  
mCLF6_5i() = dCLFi(6, 5);
```

Urban Traffic Control Mode - UTC

```
mUTC1_2d() = dUTCd(1, 2);  
  
mUTC1_2i() = dUTCi(1, 2);  
  
mUTC2_1d() = dUTCd(2, 1);  
  
mUTC2_1i() = dUTCi(2, 1);  
  
mUTC3_1d() = dUTCd(3, 1);  
  
mUTC3_1i() = dUTCi(3, 1);  
  
mUTC3_2d() = dUTCd(3, 2);  
  
mUTC3_2i() = dUTCi(3, 2);  
  
mUTC4_5d() = dUTCd(4, 5);  
  
mUTC4_5i() = dUTCi(4, 5);  
  
mUTC5_4d() = dUTCd(5, 4);  
  
mUTC5_4i() = dUTCi(5, 4);  
  
mUTC6_4d() = dUTCd(6, 4);  
  
mUTC6_4i() = dUTCi(6, 4);  
  
mUTC6_5d() = dUTCd(6, 5);  
  
mUTC6_5i() = dUTCi(6, 5);
```

Public Service Priority Mode - PSVP

```
mPSVP1_2d() = in(UTC_I2) && in(UTC_I15);  
  
mPSVP1_2e() = dPSVPe(1, 2);  
  
mPSVP1_2i() = in(UTC_I1) && in(UTC_I15);  
  
mPSVP1_3d() = in(UTC_I3) && in(UTC_I15);  
  
mPSVP1_3e() = dPSVPe(1, 3);  
  
mPSVP1_3i() = in(UTC_I1) && in(UTC_I15);  
  
mPSVP2_3d() = in(UTC_I3) && in(UTC_I15);  
  
mPSVP2_3e() = dPSVPe(2, 3);  
  
mPSVP2_3i() = in(UTC_I2) && in(UTC_I15);  
  
mPSVP2_1d() = in(UTC_I1) && in(UTC_I15);  
  
mPSVP2_1e() = dPSVPe(2, 1);  
  
mPSVP2_1i() = in(UTC_I2) && in(UTC_I15);  
  
mPSVP3_1d() = in(UTC_I1) && in(UTC_I15);  
  
mPSVP3_1e() = dPSVPe(3, 1);  
  
mPSVP3_1i() = in(UTC_I3) && in(UTC_I15);  
  
mPSVP3_2d() = in(UTC_I2) && in(UTC_I15);  
  
mPSVP3_2e() = dPSVPe(3, 2);
```

Public Service Priority Mode - PSVP

```
mPSVP3_2i() = in(UTC_I3) && in(UTC_I15);

mPSVP4_5d() = in(UTC_I18) && in(UTC_I16);

mPSVP4_5e() = dPSVPe(4, 5);

mPSVP4_5i() = in(UTC_I17) && in(UTC_I16);

mPSVP4_6d() = in(UTC_I19) && in(UTC_I16);

mPSVP4_6e() = dPSVPe(4, 6);

mPSVP4_6i() = in(UTC_I17) && in(UTC_I16);

mPSVP5_6d() = in(UTC_I19) && in(UTC_I16);

mPSVP5_6e() = dPSVPe(5, 6);

mPSVP5_6i() = in(UTC_I18) && in(UTC_I16);

mPSVP5_4d() = in(UTC_I17) && in(UTC_I16);

mPSVP5_4e() = dPSVPe(5, 4);

mPSVP5_4i() = in(UTC_I18) && in(UTC_I16);

mPSVP6_4d() = in(UTC_I17) && in(UTC_I16);

mPSVP6_4e() = dPSVPe(6, 4);

mPSVP6_4i() = in(UTC_I19) && in(UTC_I16);

mPSVP6_5d() = in(UTC_I18) && in(UTC_I16);

mPSVP6_5e() = dPSVPe(6, 5);

mPSVP6_5i() = in(UTC_I19) && in(UTC_I16);
```

Manual Control Mode - MAN

```
mMAN1_2d() = mstg(xp)==2;

mMAN1_3d() = mstg(xp)==3;

mMAN2_3d() = mstg(xp)==3;

mMAN2_1d() = mstg(xp)==1;

mMAN3_1d() = mstg(xp)==1;

mMAN3_2d() = mstg(xp)==2;

mMAN4_5d() = mstg(xp)==5;

mMAN4_6d() = mstg(xp)==6;

mMAN5_6d() = mstg(xp)==6;

mMAN5_4d() = mstg(xp)==4;

mMAN6_4d() = mstg(xp)==4;

mMAN6_5d() = mstg(xp)==5;
```

General (default) Stage Move Conditions

```
dSTGd(f,t) = drs(t);

dSTGe(f,t) = exm(t);

dUTCd(f,t)
if t==1 then return uF(1) || (uFD(1) && (uD(1) || in(utciTO1))); endif
if t==2 then return uF(2) || (uFD(2) && (uD(2) || in(utciTO1))); endif
if t==3 then return uF(3) || (uFD(3) && (uD(3) || in(utciTO1))); endif
if t==4 then return uF(4) || (uFD(4) && (uD(4) || in(utciTO2))); endif
if t==5 then return uF(5) || (uFD(5) && (uD(5) || in(utciTO2))); endif
if t==6 then return uF(6) || (uFD(6) && (uD(6) || in(utciTO2))); endif
return uF(t) || (uFD(t) && (uD(t) || drs(t)));
```

General (default) Stage Move Conditions

```
end

dUTCi(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));

dCLFd(f,t) = cIM(t) || (cDD(t) && drs(t)) || (cPS(t) && drs(t));

dCLFi(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));

dPSVPd(f,t) = drs(t);

dPSVPe(f,t) = exm(t);

dSTGd1() = dr(A);

dSTGe1() = er(A);

dPSVPd1() = pdp(A);

dPSVPe1() = pep(A);

dUTCd1(t) = uF(t) || (uFD(t) && (uD(t) || dr(A)));

dUTCi1(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));

dCLFd1(t) = cIM(t) || (cDD(t) && (dr(A))) || (cPS(t) && (dr(A)));

dCLFi1(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));

dSTGd2() = dr(B);

dSTGe2() = er(B);

dPSVPd2() = pdp(B);

dPSVPe2() = pep(B);

dUTCd2(t) = uF(t) || (uFD(t) && (uD(t) || dr(B)));

dUTCi2(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));

dCLFd2(t) = cIM(t) || (cDD(t) && (dr(B))) || (cPS(t) && (dr(B)));

dCLFi2(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));

dSTGd3() = dr(E);

dSTGe3() = er(E);

dPSVPd3() = pdp(E);

dPSVPe3() = pep(E);

dUTCd3(t) = uF(t) || (uFD(t) && (uD(t) || dr(E)));

dUTCi3(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));

dCLFd3(t) = cIM(t) || (cDD(t) && (dr(E))) || (cPS(t) && (dr(E)));

dCLFi3(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));

dSTGd4() = dr(C);

dSTGe4() = er(C);

dPSVPd4() = pdp(C);

dPSVPe4() = pep(C);

dUTCd4(t) = uF(t) || (uFD(t) && (uD(t) || dr(C)));

dUTCi4(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));

dCLFd4(t) = cIM(t) || (cDD(t) && (dr(C))) || (cPS(t) && (dr(C)));

dCLFi4(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));

dSTGd5() = dr(D);

dSTGe5() = er(D);

dPSVPd5() = pdp(D);

dPSVPe5() = pep(D);

dUTCd5(t) = uF(t) || (uFD(t) && (uD(t) || dr(D)));
```

General (default) Stage Move Conditions

```
dUTCi5(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));  
  
dCLFd5(t) = cIM(t) || (cDD(t) && (dr(D))) || (cPS(t) && (dr(D)));  
  
dCLFi5(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));  
  
dSTGd6() = dr(F);  
  
dSTGe6() = er(F);  
  
dPSVPd6() = pdp(F);  
  
dPSVPe6() = pep(F);  
  
dUTCd6(t) = uF(t) || (uFD(t) && (uD(t) || dr(F)));  
  
dUTCi6(f,t) = ((uF(f) || uFD(f)) && ((uGO(xp)==0) || ex(t)));  
  
dCLFd6(t) = cIM(t) || (cDD(t) && (dr(F))) || (cPS(t) && (dr(F)));  
  
dCLFi6(f,t) = cIM(f) || cDD(f) || cH(xp) || (cPS(t) && ex(t));
```


SYSTEM PARAMETERS

UK Parameters

Name	Description	Min	Max	Def	Value
MAN_TIMEOUT	Manual control timeout	60	600	600	600
MAN_DEMAND_ERROR	Duration of the manual demand error indication	0	60	5	5
MAN_ENABLE	Manual control enabled.	0	1	1	1
DFM_FUNC	Bit mask specifying behaviour of DFM indicator	0	999	1	1
CLF_TIMER_SYNC	Duration of the CLF group Timer Synchronisation Signal	0	0	0	0
UTC_TS	Time in HH:MM used for COTU_TS	0	2359	1200	1200
UTC_FORCE_TIMEOUT	The force bit watchdog timeout	120	300	200	200
UTC_FORCE_ACCEPT	The force accept timeout in system ticks.	1	10	4	4
UTC_LO_DELAY	Delay in seconds before COTU_LO changes is accepted.	0	99	10	10
UTC_RT_HOUR	Hours used for RT reply bit (-1 = any hour).	-1	23	0	0
UTC_RT_MIN	Minutes used for RT reply bit (-1 = any minute).	-1	59	0	0
UTC_RT_SEC	Seconds used for RT reply bit	-1	59	0	0
UTC_RT_DURATION	Duration of the RT reply bit in seconds	1	10	3	3
UTC_CG_DURATION	Duration of the CG reply bit in seconds	1	10	3	3
UTC_TSR_DURATION	Duration of the TSR reply bit in seconds	1	10	3	3
UTC_G1G2_FUNC	Bit mask specifying behaviour of G1/G2 reply bits	0	255	1	7
UTC_RR_FUNC	Bit mask specifying behaviour of RR reply bit	0	255	14	14
UTC_PV_ACCEPT	The PV accept time in system ticks	0	255	0	0
UTC_PV_HOLD	The PV hold time in system ticks	0	255	40	40
UKSTG_DIM_ALARM	The maximum time [in hours] for dimmed operation (-1 = solar cell disabled, 0 = enabled without timeout processing)	-1	100	24	24
UKSTG_DIM_FILTER	The call/cancel delay [in sec] for the DIM relays	0	255	15	15
UTC_CRB_PULSE_ON_TIME	CRB On Timer	0	1800	600	600
UTC_CRB_PULSE_OFF_TIME	CRB Off Timer	0	10	2	2

System Parameters

Name	Description	Min	Max	Value
MMI8408	XMMI: 8 x 40 MMI	0	1	1
XIN_L	XIN_L: Number of IN logging lines	1	999	10
XOUT_L	XOUT_L: Number of OUT logging lines	1	999	10
XDET_L	XDET_L: Number of DET logging lines	1	999	100
XDET_F	XDET_F: Status in case of fault	0	2	0
XSG_L	XSG_L: Number of SG logging lines	0	999	100
XHTTP	XHTTP: Presence of web server	0	1	1
XHTTP_PORT	XHTTP_PORT: Webserver port	0	65535	80
XLM_MAL	XLM_MAL: Go to major alarm if power reference(s) are not set	0	1	0
XLM_RLM	XLM_RLM: RLM callback interval in 0.1 [s]	0	100	10
XLM_T	XLM_T: Tracking off / on	0	20	5
XLM_TF	XLM_TF: Tracking filter	1	20	8
XLM_NV	XLM_NV: Nominal (bright) voltage	0	240	230
XLM_MON	XLM_MON: Monitoring type	0	10	3
XLM_AC	XLM_AC: Automatic calibration	0	1	1
XLM_DIM	XLM_DIM: Bright Din Calibration off / on	0	1	1
CLF_SYNC	CLF Synchronisation option.	0	3	0
CLF_SYNC_WDAY	CLF Weekly sync is done on..	1	7	1
CLF_TIMER_SYNC	Duration of the CLF group Timer Synchronisation Signal	0	2400	500
CLF_NON_BASE_TIME	Select base time or non base time (0 or 1)	0	1	1
XIOTU_RTS	RTS activated after # received characters (use 1, 2 or 3)	1	3	1
XIOTU_SCOOT	Default bit number used for scoot counted detectors (0 to 7)	0	7	0
XIOTU_CTS	CTS timeout per 10ms	4	10	6
UKMP_TYPE	UK Manual panel type (0=std, 1=ped, 2=multiple stages)	0	2	2
ENGTERM_BAUD	Engterm baudrate	0	99999	9600

Name	Description	Min	Max	Value
HCH_ALLRED	Use HCH for all red stage moves	0	1	1
HCH_SWOFF	Use HCH for switch off stage moves	0	1	0
PT_SYNC	Synchronize move to part time mode	0	1	1
CLF_MANUAL_STEP	Enable the Manual Step	0	1	0
CLF_DEFAULT_PLAN	None	-1	999	0
CLF_MANUAL_MEMOS	Memo for the manual step	0	1	0
COMPRESS_HARDWARE	Compress Hardware	0	1	0
XWDS_SENSOR_TIMEOUT	Wireless Detection sensor time out value	0	65535	60
ALERTPLUS_ENABLE	Alert+: Enable the service	0	1	0
ALERTPLUS_NRSESSIONS	Alert+: Number of sessions	1	99	2
ALERTPLUS_LOGINUSERG1	Alert+: Login code for user group 1	0	9999	0
ALERTPLUS_LOGINUSERG2	Alert+: Login code for user group 2	0	9999	0
ALERTPLUS_LOGINUSERG3	Alert+: Login code for user group 3	0	9999	0
ALERTPLUS_LOGINUSERG4	Alert+: Login code for user group 4	0	9999	0
IMFLOW_ENABLE	ImFlow enabled	0	1	0
IMFLOW_WDG_TIME	ImFlow: Wait time for deadlock supervision [s]	1	999	300
IMFLOW_MAX_WDG_RETRIES	ImFlow: Max. retries on deadlocks in UTC control	1	99	5
IMFLOW_MAX_CONFL_RETRIES	ImFlow: Max. retries on conflicts in UTC control	1	99	1
IMFLOW_SIM_IF	ImFlow Sim. interface	0	1	1
IMFLOW_TDC	ImFlow TDC logging	0	1	0
XWIFI	WiFi service activated [FlowNode]	0	1	0

Traffic Data Collector (TDC)

TDC enabled	Persistent	Readonly	MF (max. files)	Assigned memory
No	0	0	0	1 Mb

MEMO FIELDS

HISTORY	
Description	Text in the History text block between: --CREDAT-- and --UPDATE--
Contents	* This is memofield HISTORY

B_HISTORY	
Description	Text in the History text block between: --CREDAT-- and --UPDATE-- (AMSEC1.CNF)
Contents	; This is memofield HISTORY_B

ABC_INC	
Description	Code at the end of the file before the end of file remark (AMSEC1.CNF)
Contents	; This is memofield AMSEC_INC

XP1_INC	
Description	Code at the begin of the file, just below History, under the heading 'XP1_INC'.
Contents	/* This is memofield XP1_INC */

XP2_INC	
Description	Code under the heading 'XP2_INC', just before the 'XIN INPUTS' definitions.
Contents	/* This is memofield XP2_INC */

XP3_INC	
Description	Code under the heading 'XP3_INC', at the end of the file.
Contents	/* This is memofield XP3_INC */ P("MPDISO.R1") { P(0);D(1); P(1);D(1); P(2);D(1); P(3);D(1); P(4);D(1); P(5);D(1); P(6);D(1); P(7);D(1); P(13);D(1); P(18);D(1); }

SADAT_INC	
Description	Code at end of the file. (SADAT.CNF)
Contents	/* This is memofield SADAT_INC */ /* Function Stops CER Dets Extending phase A */ P("DFUNC.R30") { /* P(Clearance Det); D(0b00000000); */ }

VMFUNC_INC1	
Description	VMFUNC process conditions
Contents	/* This is memofield VMFUNC_INC1 */ function not(1);

VMFUNC_INC2	
Description	VMFUNC process conditions
Contents	<pre>/* This is memofield VMFUNC_INC2 */ not(x) = (x==0);</pre>

HARDWARE CONFIGURATION

Device counts

Lamp control devices	Count	Detection devices	Count	I/O devices	Count
VIRTUAL-LCM	1	ED316	0	IO1616	4
LCM	1	MTS4E	8	RIO	0
RLU	0	WDS	0		
RLU-9	0	FLIR-ZONE	0		
		FLIR-OUTPUT	0	XSER6	0
XLS12	0	XD16	0	XIO16	0
Dummy-Phase	2	Dummy-Detector	1		

Optional devices	Setting
Manual Panel Type	Multi stage
Manual Panel Flashing	Disabled
Solar Cell Monitor	24 hour time out
Dimming Operating	LV 230V Solar Cell

Configuration - LCM / XLS12 / RLU

LCM --- Physical LCM: 01 --- 001: A/Red (R01) 002: A/Amber (A01) 003: A/Green (G01) 004: B/Red (R02) 005: B/Amber (A02) 006: B/Green (G02) 007: C/Red (R03) 008: C/Amber (A03) 009: C/Green (G03) 010: D/Red (R04) 011: D/Amber (A04) 012: D/Green (G04)	
---	--

Configuration - MTS4E / ED316

MTS4E --- Unit: 01 --- 001: Detector AIN1 002: Detector AX2 003: Detector ASL3 004: Detector AIN4 --- Unit: 02 --- 001: Detector AX5 002: Detector ASL6 003: Detector BIN7 004: Detector BX8 --- Unit: 03 --- 001: Detector BSL9 002: Detector BX10 003: Detector BSL11 004: Detector BIN12 --- Unit: 04 --- 001: Detector BX13 002: Detector BSL14 003: Detector BQ1 004: Detector BQ2 --- Unit: 05 --- 001: Detector CX1 002: Detector CSL2 003: Detector CIN3 004: Detector CX4 --- Unit: 06 --- 001: Detector CSL5 002: Detector CX6 003: Detector CSL7 004: Detector DIN8 --- Unit: 07 --- 001: Detector DX9 002: Detector DSL10 003: Detector DX11 004: Detector DSL12 --- Unit: 08 ---	
---	--

001: Detector DIN13	
002: Detector DX14	
003: Detector DSL15	

IOT State - Lamp control

LCM			RLU		
Unit	Addr	*	Unit	Addr	*
=====	=====	=====	=====	=====	=====
01	001	A/Red (R01)			
01	002	A/Amber (A01)			
01	003	A/Green (G01)			
01	004	B/Red (R02)			
01	005	B/Amber (A02)			
01	006	B/Green (G02)			
01	007	C/Red (R03)			
01	008	C/Amber (A03)			
01	009	C/Green (G03)			
01	010	D/Red (R04)			
01	011	D/Amber (A04)			
01	012	D/Green (G04)			

IOT State - Detection

MTS4E					
Unit	Addr	*			
=====	=====	=====			
01	001	AIN1			
01	002	AX2			
01	003	ASL3			
01	004	AIN4			
02	001	AX5			
02	002	ASL6			
02	003	BIN7			
02	004	BX8			
03	001	BSL9			
03	002	BX10			
03	003	BSL11			
03	004	BIN12			
04	001	BX13			
04	002	BSL14			
04	003	BQ1			
04	004	BQ2			
05	001	CX1			
05	002	CSL2			
05	003	CIN3			
05	004	CX4			
06	001	CSL5			
06	002	CX6			
06	003	CSL7			
06	004	DIN8			
07	001	DX9			
07	002	DSL10			
07	003	DX11			
07	004	DSL12			
08	001	DIN13			
08	002	DX14			
08	003	DSL15			

IOT State - I/O

IO1616-IN			IO1616-OUT		
Unit	Addr	*	Unit	Addr	*
=====	=====	=====	=====	=====	=====
01	001	UTC_I1	01	001	UTC_O1
01	002	UTC_I2	01	002	UTC_O2
01	003	UTC_I3	01	003	UTC_O3
01	004	UTC_I4	01	004	UTC_O4
01	005	UTC_I7	01	005	UTC_O5

01	006	UTC_I8	01	006	UTC_O6
01	007	UTC_I9	01	007	UTC_O7
01	008	UTC_I15	01	008	UTC_O8
01	009	UTC_I16	01	009	UTC_O9
01	010	UTC_I17	01	010	UTC_O10
01	011	UTC_I18	01	011	UTC_O11
01	012	UTC_I19	01	012	UTC_O15
01	013	UTC_I20	01	013	UTC_O16
			01	014	UTC_O17
			01	015	UTC_O18
			01	016	UTC_O19
			02	001	UTC_O20
			02	002	UTC_O21
			02	003	UTC_O22
			02	004	UTC_O23
			02	005	mDET15
			02	006	mDET16
			02	007	mDET17
			02	008	mDET26
			02	009	mDET27
			02	010	mDET28
			02	011	mDET29
			02	012	mDET30
			02	013	mDET31
			02	014	mDET32
			02	015	mDET48
			02	016	mDET49
			03	001	mDET50
			03	002	mDET57
			03	003	mDET58
			03	004	mDET59
			03	005	mDET60
			03	006	mDET61
			03	007	mDET62
			03	008	mDET63
			03	009	mDET64
			03	010	T_SYNC
			03	011	MOVA_ST1
			03	012	MOVA_ST2
			03	013	mAIN1
			03	014	mAX2
			03	015	mASL3
			03	016	mAIN4
			04	001	mAX5
			04	002	mASL6
			04	003	mBIN7
			04	004	mBX8
			04	005	mBSL9
			04	006	mBX10
			04	007	mBSL11
			04	008	mBIN12
			04	009	mBX13
			04	010	mBSL14

IOT State - Controller connections (KOPMV)

KOPMV-IN			KOPMV-OUT		
Unit	Addr	*	Unit	Addr	*
=====	=====	=====	=====	=====	=====
05	001	C1F2	05	001	C2F1
05	002	C1F5	05	002	C2F2
05	003	MOVAC1_ST1	05	003	C2F5
05	004	MOVAC1_ST2	05	004	MOVAC2_ST1
			05	005	MOVAC2_ST2

INPUTS and OUTPUTS

Detectors

ID	Detector Name	Invert	Unit Type	Unit Pos.
1	AIN1	No	MTS4E-1	1
2	AX2	No	MTS4E-1	2
3	ASL3	No	MTS4E-1	3
4	AIN4	No	MTS4E-1	4
5	AX5	No	MTS4E-2	1
6	ASL6	No	MTS4E-2	2
7	BIN7	No	MTS4E-2	3
8	BX8	No	MTS4E-2	4
9	BSL9	No	MTS4E-3	1
10	BX10	No	MTS4E-3	2
11	BSL11	No	MTS4E-3	3
12	BIN12	No	MTS4E-3	4
13	BX13	No	MTS4E-4	1
14	BSL14	No	MTS4E-4	2
15	BQ1	No	MTS4E-4	3
16	BQ2	No	MTS4E-4	4
17	CX1	No	MTS4E-5	1
18	CSL2	No	MTS4E-5	2
19	CIN3	No	MTS4E-5	3
20	CX4	No	MTS4E-5	4
21	CSL5	No	MTS4E-6	1
22	CX6	No	MTS4E-6	2
23	CSL7	No	MTS4E-6	3
24	DIN8	No	MTS4E-6	4
25	DX9	No	MTS4E-7	1
26	DSL10	No	MTS4E-7	2
27	DX11	No	MTS4E-7	3
28	DSL12	No	MTS4E-7	4
29	DIN13	No	MTS4E-8	1
30	DX14	No	MTS4E-8	2
31	DSL15	No	MTS4E-8	3
32	CX1_Q	No	DUMMY-1	1

Inputs

ID	Input	Label	Invert	Toggle	Unit Type	Unit Pos.
1	C1F2		No	No	-	0
2	C1F5		No	No	-	0
3	MOVAC1_ST1		No	No	-	0
4	MOVAC1_ST2		No	No	-	0
5	UTC_I1	F1	No	No	IO1616-1	1
6	UTC_I2	F2	No	No	IO1616-1	2
7	UTC_I3	FD3	No	No	IO1616-1	3
8	UTC_I4	DX1	No	No	IO1616-1	4
9	UTC_I5		No	No	-	0
10	UTC_I6		No	No	-	0
11	UTC_I7	FM	No	No	IO1616-1	5
12	UTC_I8	TS	No	No	IO1616-1	6
13	UTC_I9	SO	No	No	IO1616-1	7
14	UTC_I10		No	No	-	0
15	UTC_I11		No	No	-	0
16	UTC_I12		No	No	-	0
17	UTC_I13		No	No	-	0
18	UTC_I14		No	No	-	0

ID	Input	Label	Invert	Toggle	Unit Type	Unit Pos.
19	UTC_I15	T01	No	No	IO1616-1	8
20	UTC_I16	T02	No	No	IO1616-1	9
21	UTC_I17	F4	No	No	IO1616-1	10
22	UTC_I18	F5	No	No	IO1616-1	11
23	UTC_I19	FD6	No	No	IO1616-1	12
24	UTC_I20	DX2	No	No	IO1616-1	13
25	UTC_I21		No	No	-	0
26	UTC_I22		No	No	-	0
27	UTC_I23		No	No	-	0
28	UTC_I24		No	No	-	0
29	UTC_I25		No	No	-	0
30	UTC_I26		No	No	-	0
31	UTC_I27		No	No	-	0
32	UTC_I28		No	No	-	0
33	UTC_I29		No	No	-	0
34	UTC_I30		No	No	-	0
35	UTC_I31		No	No	-	0
36	UTC_I32		No	No	-	0
37	DIM_IN		No	No	DIMMING	1

Outputs

ID	Output	Label	Invert	Unit Type	Unit Pos.	Intersection	SRM2 Only
1	mDET15		No	IO1616-2	5	0	No
2	mDET16		No	IO1616-2	6	0	No
3	mDET17		No	IO1616-2	7	0	No
4	mDET26		No	IO1616-2	8	0	No
5	mDET27		No	IO1616-2	9	0	No
6	mDET28		No	IO1616-2	10	0	No
7	mDET29		No	IO1616-2	11	0	No
8	mDET30		No	IO1616-2	12	0	No
9	mDET31		No	IO1616-2	13	0	No
10	mDET32		No	IO1616-2	14	0	No
11	mDET48		No	IO1616-2	15	0	No
12	mDET49		No	IO1616-2	16	0	No
13	mDET50		No	IO1616-3	1	0	No
14	mDET57		No	IO1616-3	2	0	No
15	mDET58		No	IO1616-3	3	0	No
16	mDET59		No	IO1616-3	4	0	No
17	mDET60		No	IO1616-3	5	0	No
18	mDET61		No	IO1616-3	6	0	No
19	mDET62		No	IO1616-3	7	0	No
20	mDET63		No	IO1616-3	8	0	No
21	mDET64		No	IO1616-3	9	0	No
22	T_SYNC		No	IO1616-3	10	0	No
23	MOVA_ST1		No	IO1616-3	11	0	No
24	MOVA_ST2		No	IO1616-3	12	0	No
25	mAIN1		No	IO1616-3	13	0	No
26	mAX2		No	IO1616-3	14	0	No
27	mASL3		No	IO1616-3	15	0	No
28	mAIN4		No	IO1616-3	16	0	No
29	mAX5		No	IO1616-4	1	0	No
30	mASL6		No	IO1616-4	2	0	No
31	mBIN7		No	IO1616-4	3	0	No
32	mBX8		No	IO1616-4	4	0	No
33	mBSL9		No	IO1616-4	5	0	No
34	mBX10		No	IO1616-4	6	0	No
35	mBSL11		No	IO1616-4	7	0	No

ID	Output	Label	Invert	Unit Type	Unit Pos.	Intersection	SRM2 Only
36	mBIN12		No	IO1616-4	8	0	No
37	mBX13		No	IO1616-4	9	0	No
38	mBSL14		No	IO1616-4	10	0	No
39	UTC_O1	G1	No	IO1616-1	1	0	No
40	UTC_O2	G2	No	IO1616-1	2	0	No
41	UTC_O3	G3	No	IO1616-1	3	0	No
42	UTC_O4	DF1	No	IO1616-1	4	0	No
43	UTC_O5	UF3	No	IO1616-1	5	0	No
44	UTC_O6	UF4	No	IO1616-1	6	0	No
45	UTC_O7	FC	No	IO1616-1	7	0	No
46	UTC_O8	GR1	No	IO1616-1	8	0	No
47	UTC_O9	RR	No	IO1616-1	9	0	No
48	UTC_O10	CF	No	IO1616-1	10	0	No
49	UTC_O11	HC1	No	IO1616-1	11	0	No
50	UTC_O12		No	-	0	0	No
51	UTC_O13		No	-	0	0	No
52	UTC_O14		No	-	0	0	No
53	UTC_O15	CRB1	No	IO1616-1	12	0	No
54	UTC_O16	CRB2	No	IO1616-1	13	0	No
55	UTC_O17	G4	No	IO1616-1	14	0	No
56	UTC_O18	G5	No	IO1616-1	15	0	No
57	UTC_O19	G6	No	IO1616-1	16	0	No
58	UTC_O20	DF2	No	IO1616-2	1	0	No
59	UTC_O21	UF5	No	IO1616-2	2	0	No
60	UTC_O22	UF6	No	IO1616-2	3	0	No
61	UTC_O23	HC2	No	IO1616-2	4	0	No
62	UTC_O24		No	-	0	0	No
63	UTC_O25		No	-	0	0	No
64	UTC_O26		No	-	0	0	No
65	UTC_O27		No	-	0	0	No
66	UTC_O28		No	-	0	0	No
67	UTC_O29		No	-	0	0	No
68	UTC_O30		No	-	0	0	No
69	UTC_O31		No	-	0	0	No
70	UTC_O32		No	-	0	0	No
71	DIM_OUT		No	DIMMING	1	0	No

Report executed at 2/15/2022 11:51 AM

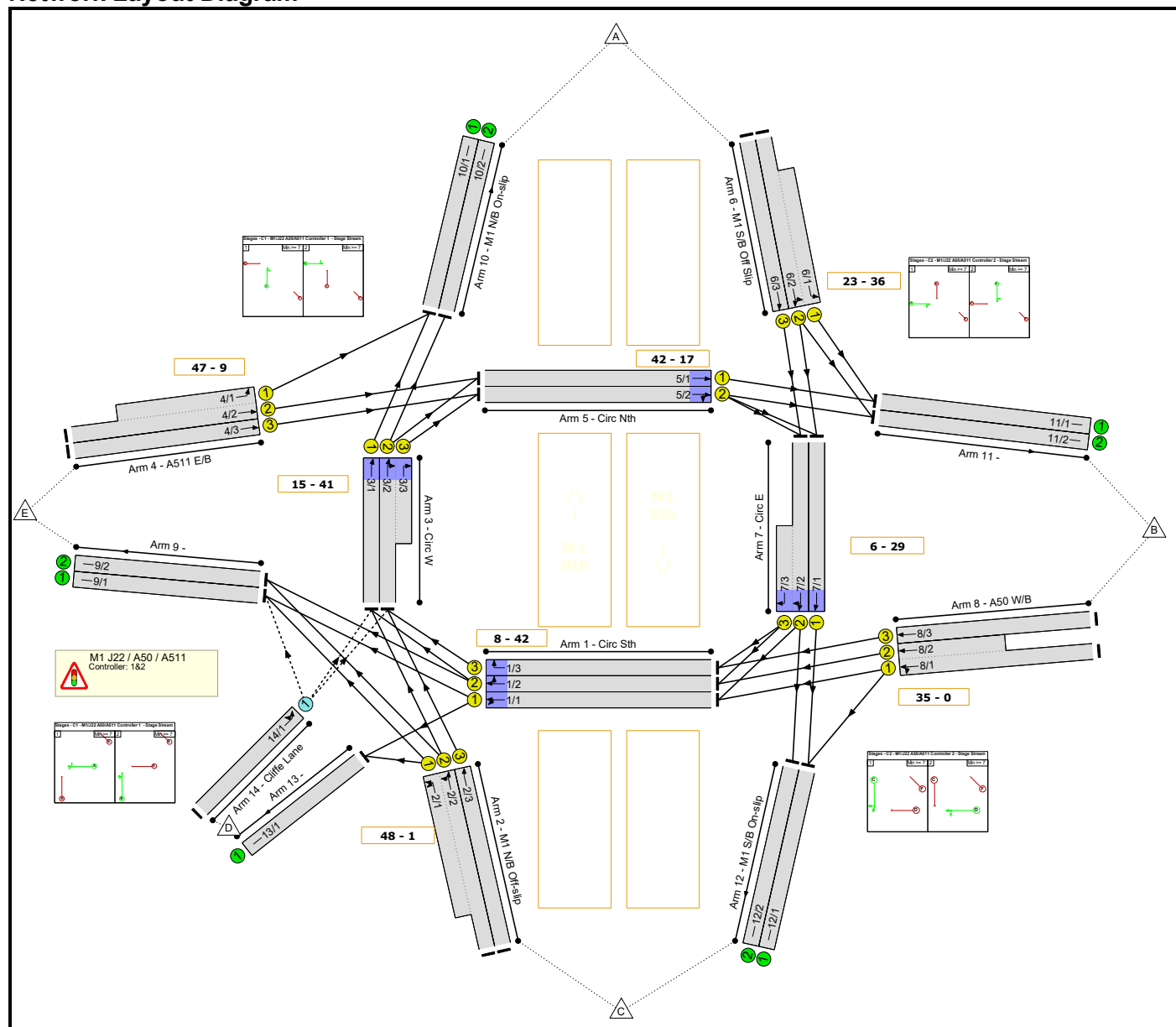
APPENDIX D M1 JUNCTION 22 – EXISTING LAYOUT LINSIG MODEL OUTPUT

Detailed Input Data And Results

User and Project Details

Project:	
Title:	
Location:	M1 J22 / A50
Additional detail:	
File name:	T22523 M1 J22 Roundabout Base Rev A.lsg3x
Author:	
Company:	
Address:	
Linsig Version:	3, 3, 2, 0

Network Layout Diagram



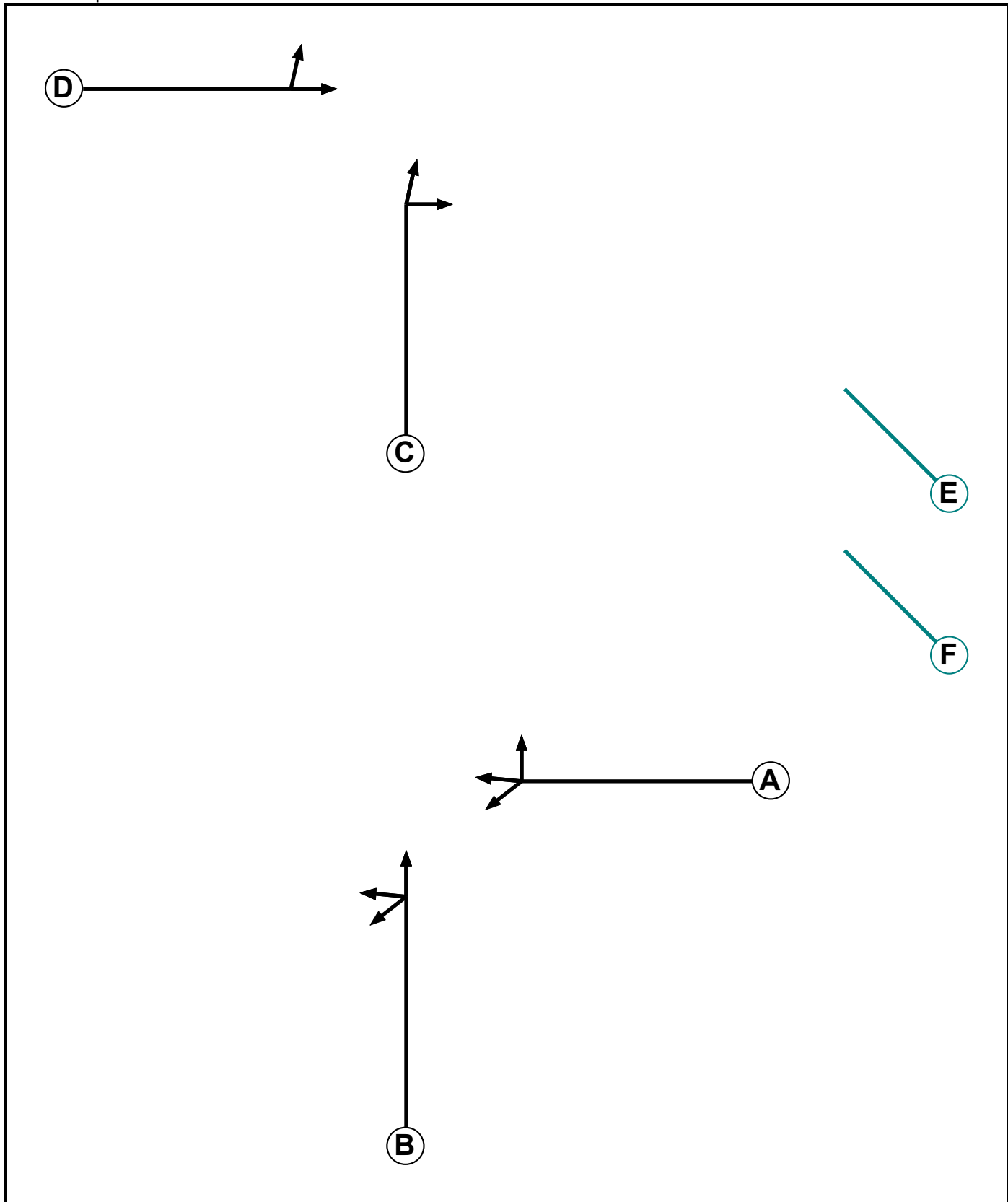
Scenarios

Number	Scenario Name	Flow Group	Network Control Plan	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	2025 Baseline AM Peak	2025 Baseline AM Peak	Network Control Plan 1	08:00 - 09:00	60/57	1.4	61.02
2	2025 Baseline PM Peak	2025 Baseline PM Peak	Network Control Plan 1	17:00 - 18:00	60/51	3.2	55.04
3	2028 Future Base AM Peak	2028 Future Base AM Peak	Network Control Plan 1	08:00 - 09:00	60/57	-0.4	63.74
4	2028 Future Base PM Peak	2028 Future Base PM Peak	Network Control Plan 1	17:00 - 18:00	60/51	7.3	51.45
5	2030 Future Base AM Peak	2030 Future Base AM Peak	Network Control Plan 1	08:00 - 09:00	60/57	0.2	64.95
6	2030 Future Base PM Peak	2030 Future Base PM Peak	Network Control Plan 1	17:00 - 18:00	60/51	5.0	56.77
7	2036 Future Base AM Peak	2036 Future Base AM Peak	Network Control Plan 1	08:00 - 09:00	60/57	-8.6	83.07
8	2036 Future Base PM Peak	2036 Future Base PM Peak	Network Control Plan 1	17:00 - 18:00	60/51	2.0	62.67

Controller Summary

Controller	Type	SCN	Stage Stream	Num Phases	Num Stages	Controls Junctions	Controller Notes
C1 - M1/J22 A50/A511 Controller 1	Gen		Stage Stream 1	3	2	M1 J22 / A50 / A511	
			Stage Stream 2	3	2	M1 J22 / A50 / A511	
C2 - M1/J22 A50/A511 Controller 2	Pek		Stage Stream 1	3	2	M1 J22 / A50 / A511	
			Stage Stream 2	3	2	M1 J22 / A50 / A511	

Controller :C1 - M1/J22 A50/A511 Controller 1
Phase Diagram



Phase Input Data

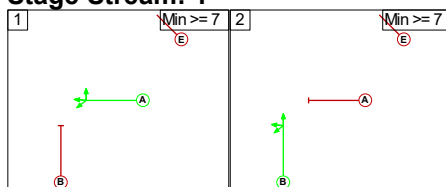
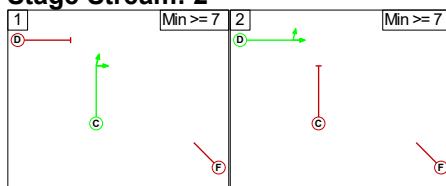
Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min (s)	Cont Min (s)
A	Traffic	1		7	7
B	Traffic	1		7	7
C	Traffic	2		7	7
D	Traffic	2		7	7
E	Dummy	1		4	4
F	Dummy	2		4	4

Phase Intergreens Matrix

		Starting Phase					
Terminating Phase		A	B	C	D	E	F
	A		6	-	-	3	-
	B	7		-	-	3	-
	C	-	-		6	-	3
	D	-	-	6		-	3
	E	2	2	-	-		-
	F	-	-	2	2	-	

Phases in Stage

Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram**Stage Stream: 1****Stage Stream: 2****Phase Delays****Stage Stream: 1**

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Detailed Input Data And Results

Stage Stream: 2

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

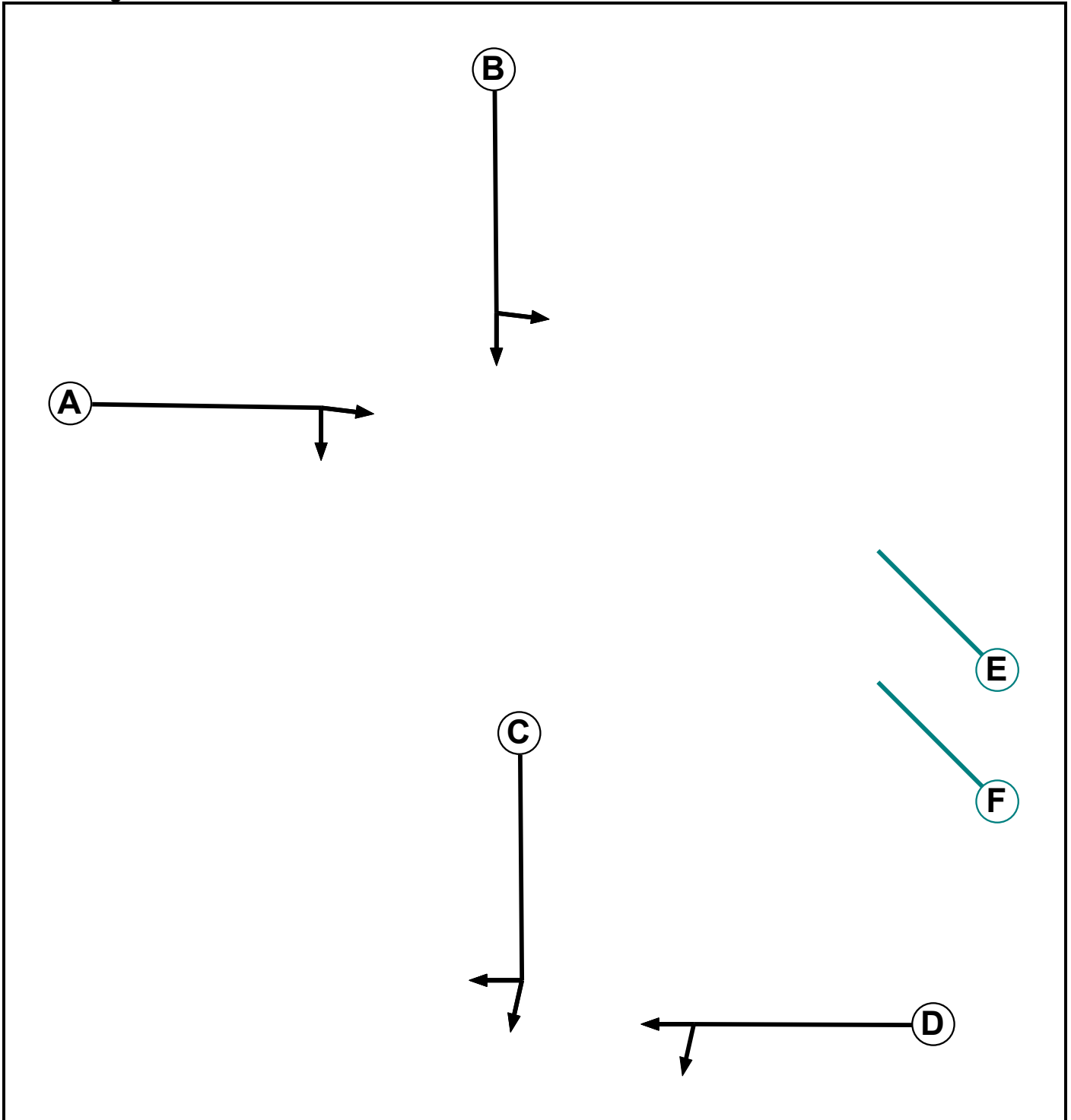
Stage Stream: 1

	To Stage	
From Stage		
	1	2
	1	6
	2	7

Stage Stream: 2

	To Stage	
From Stage		
	1	2
	1	6
	2	6

Phase Diagram



Phase Input Data

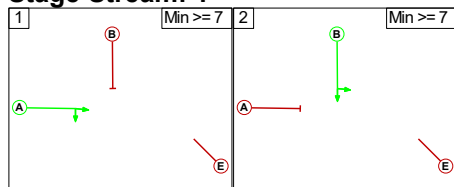
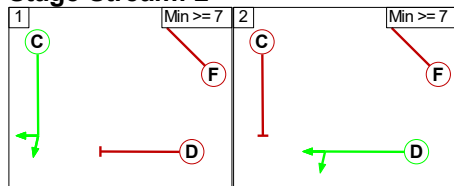
Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min (s)	Cont Min (s)
A	Traffic	1		7	7
B	Traffic	1		7	7
C	Traffic	2		7	7
D	Traffic	2		7	7
E	Dummy	1		4	4
F	Dummy	2		4	4

Phase Intergreens Matrix

		Starting Phase					
Terminating Phase		A	B	C	D	E	F
	A		6	-	-	3	-
	B	6		-	-	3	-
	C	-	-		6	-	3
	D	-	-	6		-	3
	E	2	2	-	-		-
	F	-	-	2	2	-	

Phases in Stage

Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram**Stage Stream: 1****Stage Stream: 2****Phase Delays****Stage Stream: 1**

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Detailed Input Data And Results

Stage Stream: 2

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

Stage Stream: 1

	To Stage	
From Stage		
	1	2
	1	6
	2	6

Stage Stream: 2

	To Stage	
From Stage		
	1	2
	1	6
	2	6

Lane Input Data

Junction: M1 J22 / A50 / A511												
Lane	Lane Type	Phases	Start Disp. (s)	End Disp. (s)	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient (%)	Nearside Lane	Turns	Turning Radius (m)
1/1 (Circ Sth)	U	A	2	3	17.4	Geom	-	3.80	0.00	Y	Arm 9 Ahead	Inf
											Arm 13 Ahead	Inf
1/2 (Circ Sth)	U	A	2	3	17.4	Geom	-	3.80	0.00	N	Arm 3 Right	75.00
											Arm 9 Ahead	75.00
1/3 (Circ Sth)	U	A	2	3	17.4	Geom	-	3.80	0.00	Y	Arm 3 Right	75.00
2/1 (M1 N/B Off-slip)	U	B	2	3	16.9	Geom	-	4.00	0.00	Y	Arm 9 Left	80.00
											Arm 13 Left	60.00
2/2 (M1 N/B Off-slip)	U	B	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 3 Ahead	80.00
2/3 (M1 N/B Off-slip)	U	B	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 9 Left	60.00
											Arm 3 Ahead	80.00
3/1 (Circ W)	U	C	2	3	5.2	Geom	-	4.20	0.00	Y	Arm 10 Ahead	75.00
3/2 (Circ W)	U	C	2	3	5.2	Geom	-	4.20	0.00	N	Arm 5 Right	75.00
											Arm 10 Ahead	75.00
3/3 (Circ W)	U	C	2	3	8.0	Geom	-	4.20	0.00	Y	Arm 5 Right	75.00
4/1 (A511 E/B)	U	D	2	3	13.0	Geom	-	4.10	0.00	Y	Arm 10 Left	50.00
4/2 (A511 E/B)	U	D	2	3	60.0	Geom	-	4.10	0.00	N	Arm 5 Ahead	70.00
4/3 (A511 E/B)	U	D	2	3	60.0	Geom	-	4.10	0.00	Y	Arm 5 Ahead	70.00
5/1 (Circ Nth)	U	A	2	3	19.7	Geom	-	4.60	0.00	Y	Arm 11 Ahead	75.00
5/2 (Circ Nth)	U	A	2	3	19.7	Geom	-	4.60	0.00	Y	Arm 7 Right	75.00
											Arm 11 Ahead	75.00
6/1 (M1 S/B Off Slip)	U	B	2	3	15.0	Geom	-	4.50	0.00	Y	Arm 11 Left	80.00

Detailed Input Data And Results

6/2 (M1 S/B Off Slip)	U	B	2	3	60.0	Geom	-	4.50	0.00	Y	Arm 7 Ahead	80.00
											Arm 11 Left	80.00
6/3 (M1 S/B Off Slip)	U	B	2	3	60.0	Geom	-	4.50	0.00	Y	Arm 7 Ahead	80.00
7/1 (Circ E)	U	C	2	3	7.8	Geom	-	4.50	0.00	Y	Arm 12 Ahead	Inf
7/2 (Circ E)	U	C	2	3	12.2	Geom	-	4.50	0.00	N	Arm 1 Right	75.00
											Arm 12 Ahead	Inf
7/3 (Circ E)	U	C	2	3	8.0	Geom	-	4.50	0.00	Y	Arm 1 Right	75.00
8/1 (A50 W/B)	U	D	2	3	60.0	Geom	-	3.80	0.00	Y	Arm 1 Ahead	70.00
											Arm 12 Left	70.00
8/2 (A50 W/B)	U	D	2	3	10.0	Geom	-	3.80	0.00	N	Arm 1 Ahead	70.00
8/3 (A50 W/B)	U	D	2	3	60.0	Geom	-	3.80	0.00	Y	Arm 1 Ahead	70.00
9/1	U		2	3	60.0	Inf	-	-	-	-	-	-
9/2	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1 (M1 N/B On-slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
10/2 (M1 N/B On-slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1 (M1 S/B On-slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/2 (M1 S/B On-slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
13/1	U		2	3	60.0	Inf	-	-	-	-	-	-
14/1 (Cliffe Lane)	O		2	3	60.0	Geom	-	3.90	0.00	Y	Arm 3 Left	Inf
											Arm 9 Left	Inf

Give-Way Lane Input Data

Junction: M1 J22 / A50 / A511											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
14/1 (Cliffe Lane)	3/1 (Left)	1000	0	1/1	0.33	All	-	-	-	-	-
				1/2	0.33	All					
				1/3	0.33	All					
				2/1	0.33	All					
				2/2	0.33	All					
				2/3	0.33	All					
	3/2 (Left)	1000	0	1/1	0.33	All					
				1/2	0.33	All					
				1/3	0.33	All					
				2/1	0.33	All					
				2/2	0.33	All					
				2/3	0.33	All					
	9/1 (Left)	1000	0	1/1	0.33	All					
				1/2	0.33	All					
				1/3	0.33	All					
				2/1	0.33	All					
				2/2	0.33	All					
				2/3	0.33	All					

Detailed Input Data And Results

Lane Connector Input Data

Junction: M1 J22 / A50 / A511				
Org Lane	Dest Lane	Junction	Modelled Mean Cruise Time (s)	Platoon Dispersion
1/1	9/1	Internal	5	35
1/1	13/1	Internal	5	35
1/2	3/1	Internal	13	N/A
1/2	9/2	Internal	5	35
1/3	3/2	Internal	13	N/A
2/1	9/1	Internal	5	35
2/1	13/1	Internal	5	35
2/2	3/1	Internal	12	N/A
2/2	9/2	Internal	5	35
2/3	3/2	Internal	12	N/A
3/1	10/1	Internal	5	35
3/2	5/1	Internal	13	N/A
3/2	10/2	Internal	5	35
3/3	5/2	Internal	13	N/A
4/1	10/1	Internal	5	35
4/2	5/1	Internal	15	N/A
4/3	5/2	Internal	15	N/A
5/1	11/1	Internal	5	35
5/2	7/1	Internal	9	N/A
5/2	7/2	Internal	9	N/A
5/2	11/2	Internal	5	35
6/1	11/1	Internal	5	35
6/2	7/1	Internal	10	N/A
6/2	11/2	Internal	5	35
6/3	7/2	Internal	10	N/A
7/1	12/1	Internal	5	35
7/2	1/1	Internal	12	N/A
7/2	12/2	Internal	5	35
7/3	1/2	Internal	12	N/A
7/3	1/3	Internal	12	N/A
8/1	1/1	Internal	12	N/A
8/1	12/1	Internal	5	35
8/2	1/2	Internal	12	N/A
8/3	1/3	Internal	12	N/A
14/1	3/1	Internal	7	N/A
14/1	3/2	Internal	7	N/A
14/1	9/1	Internal	5	35

Scenario 1: '2025 Baseline AM Peak' (FG1: '2025 Baseline AM Peak', Plan 1: 'Network Control Plan 1')**Lane Saturation Flows**

Junction: M1 J22 / A50 / A511								
Lane	Lane Width (m)	Gradient (%)	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Circ Sth)	3.80	0.00	Y	Arm 9 Ahead	Inf	88.4 %	1995	1995
				Arm 13 Ahead	Inf	11.6 %		
1/2 (Circ Sth)	3.80	0.00	N	Arm 3 Right	75.00	42.9 %	2093	2093
1/3 (Circ Sth)	3.80	0.00	Y	Arm 9 Ahead	75.00	57.1 %		
2/1 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Right	75.00	100.0 %	1956	1956
	4.00	0.00	Y	Arm 9 Left	80.00	95.3 %	1977	1977
				Arm 13 Left	60.00	4.7 %		
2/2 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	0.0 %	1966	1966
				Arm 9 Left	60.00	100.0 %		
2/3 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	100.0 %	1978	1978
3/1 (Circ W)	4.20	0.00	Y	Arm 10 Ahead	75.00	100.0 %	1995	1995
3/2 (Circ W)	4.20	0.00	N	Arm 5 Right	75.00	1.1 %	2132	2132
				Arm 10 Ahead	75.00	98.9 %		
3/3 (Circ W)	4.20	0.00	Y	Arm 5 Right	75.00	100.0 %	1995	1995
4/1 (A511 E/B)	4.10	0.00	Y	Arm 10 Left	50.00	100.0 %	1966	1966
4/2 (A511 E/B)	4.10	0.00	N	Arm 5 Ahead	70.00	100.0 %	2120	2120
4/3 (A511 E/B)	4.10	0.00	Y	Arm 5 Ahead	70.00	100.0 %	1983	1983
5/1 (Circ Nth)	4.60	0.00	Y	Arm 11 Ahead	75.00	100.0 %	2034	2034
5/2 (Circ Nth)	4.60	0.00	Y	Arm 7 Right	75.00	83.0 %	2034	2034
				Arm 11 Ahead	75.00	17.0 %		
6/1 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 11 Left	80.00	100.0 %	2027	2027
6/2 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	14.9 %	2027	2027
				Arm 11 Left	80.00	85.1 %		
6/3 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	100.0 %	2027	2027
7/1 (Circ E)	4.50	0.00	Y	Arm 12 Ahead	Inf	100.0 %	2065	2065
7/2 (Circ E)	4.50	0.00	N	Arm 1 Right	75.00	77.1 %	2172	2172
				Arm 12 Ahead	Inf	22.9 %		
7/3 (Circ E)	4.50	0.00	Y	Arm 1 Right	75.00	100.0 %	2025	2025

Detailed Input Data And Results

8/1 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	90.4 %	1953	1953
				Arm 12 Left	70.00	9.6 %		
8/2 (A50 W/B)	3.80	0.00	N	Arm 1 Ahead	70.00	100.0 %	2090	2090
8/3 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	100.0 %	1953	1953
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
10/1 (M1 N/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M1 N/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1 (M1 S/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (M1 S/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Cliffe Lane)	3.90	0.00	Y	Arm 3 Left	Inf	77.0 %	2005	2005
				Arm 9 Left	Inf	23.0 %		

Bonus Green Times

No Bonus Greens are defined For Scenario 1

Scenario 2: '2025 Baseline PM Peak ' (FG2: '2025 Baseline PM Peak', Plan 1: 'Network Control Plan 1')**Lane Saturation Flows**

Junction: M1 J22 / A50 / A511								
Lane	Lane Width (m)	Gradient (%)	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Circ Sth)	3.80	0.00	Y	Arm 9 Ahead	Inf	88.6 %	1995	1995
				Arm 13 Ahead	Inf	11.4 %		
1/2 (Circ Sth)	3.80	0.00	N	Arm 3 Right	75.00	23.6 %	2093	2093
				Arm 9 Ahead	75.00	76.4 %		
1/3 (Circ Sth)	3.80	0.00	Y	Arm 3 Right	75.00	100.0 %	1956	1956
2/1 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 9 Left	80.00	91.7 %	1977	1977
				Arm 13 Left	60.00	8.3 %		
2/2 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	0.0 %	1966	1966
				Arm 9 Left	60.00	100.0 %		
2/3 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	100.0 %	1978	1978
3/1 (Circ W)	4.20	0.00	Y	Arm 10 Ahead	75.00	100.0 %	1995	1995
3/2 (Circ W)	4.20	0.00	N	Arm 5 Right	75.00	0.7 %	2132	2132
				Arm 10 Ahead	75.00	99.3 %		
3/3 (Circ W)	4.20	0.00	Y	Arm 5 Right	75.00	100.0 %	1995	1995
4/1 (A511 E/B)	4.10	0.00	Y	Arm 10 Left	50.00	100.0 %	1966	1966
4/2 (A511 E/B)	4.10	0.00	N	Arm 5 Ahead	70.00	100.0 %	2120	2120
				Arm 10 Ahead	70.00	100.0 %		
4/3 (A511 E/B)	4.10	0.00	Y	Arm 5 Ahead	70.00	100.0 %	1983	1983
5/1 (Circ Nth)	4.60	0.00	Y	Arm 11 Ahead	75.00	100.0 %	2034	2034
5/2 (Circ Nth)	4.60	0.00	Y	Arm 7 Right	75.00	78.6 %	2034	2034
				Arm 11 Ahead	75.00	21.4 %		
6/1 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 11 Left	80.00	100.0 %	2027	2027
6/2 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	12.4 %	2027	2027
				Arm 11 Left	80.00	87.6 %		
6/3 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	100.0 %	2027	2027
7/1 (Circ E)	4.50	0.00	Y	Arm 12 Ahead	Inf	100.0 %	2065	2065
7/2 (Circ E)	4.50	0.00	N	Arm 1 Right	75.00	65.8 %	2176	2176
				Arm 12 Ahead	Inf	34.2 %		

Detailed Input Data And Results

7/3 (Circ E)	4.50	0.00	Y	Arm 1 Right	75.00	100.0 %	2025	2025
8/1 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	90.8 %	1953	1953
				Arm 12 Left	70.00	9.2 %		
8/2 (A50 W/B)	3.80	0.00	N	Arm 1 Ahead	70.00	100.0 %	2090	2090
8/3 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	100.0 %	1953	1953
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
10/1 (M1 N/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M1 N/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1 (M1 S/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (M1 S/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Cliffe Lane)	3.90	0.00	Y	Arm 3 Left	Inf	88.8 %	2005	2005
				Arm 9 Left	Inf	11.2 %		

Bonus Green Times

No Bonus Greens are defined For Scenario 2

Scenario 3: '2028 Future Base AM Peak' (FG3: '2028 Future Base AM Peak', Plan 1: 'Network Control Plan 1')
Lane Saturation Flows

Junction: M1 J22 / A50 / A511								
Lane	Lane Width (m)	Gradient (%)	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Circ Sth)	3.80	0.00	Y	Arm 9 Ahead	Inf	86.4 %	1995	1995
				Arm 13 Ahead	Inf	13.6 %		
1/2 (Circ Sth)	3.80	0.00	N	Arm 3 Right	75.00	29.7 %	2093	2093
				Arm 9 Ahead	75.00	70.3 %		
1/3 (Circ Sth)	3.80	0.00	Y	Arm 3 Right	75.00	100.0 %	1956	1956
2/1 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 9 Left	80.00	94.6 %	1977	1977
				Arm 13 Left	60.00	5.4 %		
2/2 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	0.0 %	1966	1966
				Arm 9 Left	60.00	100.0 %		
2/3 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	100.0 %	1978	1978
3/1 (Circ W)	4.20	0.00	Y	Arm 10 Ahead	75.00	100.0 %	1995	1995
3/2 (Circ W)	4.20	0.00	N	Arm 5 Right	75.00	0.3 %	2132	2132
				Arm 10 Ahead	75.00	99.7 %		
3/3 (Circ W)	4.20	0.00	Y	Arm 5 Right	75.00	100.0 %	1995	1995
4/1 (A511 E/B)	4.10	0.00	Y	Arm 10 Left	50.00	100.0 %	1966	1966
4/2 (A511 E/B)	4.10	0.00	N	Arm 5 Ahead	70.00	100.0 %	2120	2120
				Arm 10 Ahead	70.00	100.0 %		
4/3 (A511 E/B)	4.10	0.00	Y	Arm 5 Ahead	70.00	100.0 %	1983	1983
5/1 (Circ Nth)	4.60	0.00	Y	Arm 11 Ahead	75.00	100.0 %	2034	2034
5/2 (Circ Nth)	4.60	0.00	Y	Arm 7 Right	75.00	85.2 %	2034	2034
				Arm 11 Ahead	75.00	14.8 %		
6/1 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 11 Left	80.00	100.0 %	2027	2027
6/2 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	23.4 %	2027	2027
				Arm 11 Left	80.00	76.6 %		
6/3 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	100.0 %	2027	2027
7/1 (Circ E)	4.50	0.00	Y	Arm 12 Ahead	Inf	100.0 %	2065	2065
7/2 (Circ E)	4.50	0.00	N	Arm 1 Right	75.00	90.3 %	2166	2166
				Arm 12 Ahead	Inf	9.7 %		

Detailed Input Data And Results

7/3 (Circ E)	4.50	0.00	Y	Arm 1 Right	75.00	100.0 %	2025	2025
8/1 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	90.4 %	1953	1953
				Arm 12 Left	70.00	9.6 %		
8/2 (A50 W/B)	3.80	0.00	N	Arm 1 Ahead	70.00	100.0 %	2090	2090
8/3 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	100.0 %	1953	1953
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
10/1 (M1 N/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M1 N/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1 (M1 S/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (M1 S/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Cliffe Lane)	3.90	0.00	Y	Arm 3 Left	Inf	74.3 %	2005	2005
				Arm 9 Left	Inf	25.7 %		

Bonus Green Times

No Bonus Greens are defined For Scenario 3

Scenario 4: '2028 Future Base PM Peak' (FG4: '2028 Future Base PM Peak', Plan 1: 'Network Control Plan 1')
Lane Saturation Flows

Junction: M1 J22 / A50 / A511								
Lane	Lane Width (m)	Gradient (%)	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Circ Sth)	3.80	0.00	Y	Arm 9 Ahead	Inf	92.8 %	1995	1995
				Arm 13 Ahead	Inf	7.2 %		
1/2 (Circ Sth)	3.80	0.00	N	Arm 3 Right	75.00	11.7 %	2093	2093
				Arm 9 Ahead	75.00	88.3 %		
1/3 (Circ Sth)	3.80	0.00	Y	Arm 3 Right	75.00	100.0 %	1956	1956
2/1 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 9 Left	80.00	95.9 %	1977	1977
				Arm 13 Left	60.00	4.1 %		
2/2 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	0.0 %	1966	1966
				Arm 9 Left	60.00	100.0 %		
2/3 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	100.0 %	1978	1978
3/1 (Circ W)	4.20	0.00	Y	Arm 10 Ahead	75.00	100.0 %	1995	1995
3/2 (Circ W)	4.20	0.00	N	Arm 5 Right	75.00	0.5 %	2132	2132
				Arm 10 Ahead	75.00	99.5 %		
3/3 (Circ W)	4.20	0.00	Y	Arm 5 Right	75.00	100.0 %	1995	1995
4/1 (A511 E/B)	4.10	0.00	Y	Arm 10 Left	50.00	100.0 %	1966	1966
4/2 (A511 E/B)	4.10	0.00	N	Arm 5 Ahead	70.00	100.0 %	2120	2120
				Arm 10 Ahead	70.00	100.0 %		
4/3 (A511 E/B)	4.10	0.00	Y	Arm 5 Ahead	70.00	100.0 %	1983	1983
5/1 (Circ Nth)	4.60	0.00	Y	Arm 11 Ahead	75.00	100.0 %	2034	2034
5/2 (Circ Nth)	4.60	0.00	Y	Arm 7 Right	75.00	86.6 %	2034	2034
				Arm 11 Ahead	75.00	13.4 %		
6/1 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 11 Left	80.00	100.0 %	2027	2027
6/2 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	19.4 %	2027	2027
				Arm 11 Left	80.00	80.6 %		
6/3 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	100.0 %	2027	2027
7/1 (Circ E)	4.50	0.00	Y	Arm 12 Ahead	Inf	100.0 %	2065	2065
7/2 (Circ E)	4.50	0.00	N	Arm 1 Right	75.00	63.6 %	2177	2177
				Arm 12 Ahead	Inf	36.4 %		

Detailed Input Data And Results

7/3 (Circ E)	4.50	0.00	Y	Arm 1 Right	75.00	100.0 %	2025	2025
8/1 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	93.3 %	1953	1953
				Arm 12 Left	70.00	6.7 %		
8/2 (A50 W/B)	3.80	0.00	N	Arm 1 Ahead	70.00	100.0 %	2090	2090
8/3 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	100.0 %	1953	1953
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
10/1 (M1 N/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M1 N/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1 (M1 S/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (M1 S/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Cliffe Lane)	3.90	0.00	Y	Arm 3 Left	Inf	85.0 %	2005	2005
				Arm 9 Left	Inf	15.0 %		

Bonus Green Times

No Bonus Greens are defined For Scenario 4

**Scenario 5: '2030 Future Base AM Peak' (FG5: '2030 Future Base AM Peak', Plan 1: 'Network Control Plan 1')
Lane Saturation Flows**

Junction: M1 J22 / A50 / A511								
Lane	Lane Width (m)	Gradient (%)	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Circ Sth)	3.80	0.00	Y	Arm 9 Ahead	Inf	85.9 %	1995	1995
				Arm 13 Ahead	Inf	14.1 %		
1/2 (Circ Sth)	3.80	0.00	N	Arm 3 Right	75.00	31.6 %	2093	2093
				Arm 9 Ahead	75.00	68.4 %		
1/3 (Circ Sth)	3.80	0.00	Y	Arm 3 Right	75.00	100.0 %	1956	1956
2/1 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 9 Left	80.00	94.4 %	1977	1977
				Arm 13 Left	60.00	5.6 %		
2/2 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	0.0 %	1966	1966
				Arm 9 Left	60.00	100.0 %		
2/3 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	100.0 %	1978	1978
3/1 (Circ W)	4.20	0.00	Y	Arm 10 Ahead	75.00	100.0 %	1995	1995
3/2 (Circ W)	4.20	0.00	N	Arm 5 Right	75.00	0.5 %	2132	2132
				Arm 10 Ahead	75.00	99.5 %		
3/3 (Circ W)	4.20	0.00	Y	Arm 5 Right	75.00	100.0 %	1995	1995
4/1 (A511 E/B)	4.10	0.00	Y	Arm 10 Left	50.00	100.0 %	1966	1966
4/2 (A511 E/B)	4.10	0.00	N	Arm 5 Ahead	70.00	100.0 %	2120	2120
				Arm 10 Ahead	70.00	100.0 %		
4/3 (A511 E/B)	4.10	0.00	Y	Arm 5 Ahead	70.00	100.0 %	1983	1983
5/1 (Circ Nth)	4.60	0.00	Y	Arm 11 Ahead	75.00	100.0 %	2034	2034
5/2 (Circ Nth)	4.60	0.00	Y	Arm 7 Right	75.00	86.0 %	2034	2034
				Arm 11 Ahead	75.00	14.0 %		
6/1 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 11 Left	80.00	100.0 %	2027	2027
6/2 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	23.5 %	2027	2027
				Arm 11 Left	80.00	76.5 %		
6/3 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	100.0 %	2027	2027
7/1 (Circ E)	4.50	0.00	Y	Arm 12 Ahead	Inf	100.0 %	2065	2065
7/2 (Circ E)	4.50	0.00	N	Arm 1 Right	75.00	80.7 %	2170	2170
				Arm 12 Ahead	Inf	19.3 %		

Detailed Input Data And Results

7/3 (Circ E)	4.50	0.00	Y	Arm 1 Right	75.00	100.0 %	2025	2025
8/1 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	90.0 %	1953	1953
				Arm 12 Left	70.00	10.0 %		
8/2 (A50 W/B)	3.80	0.00	N	Arm 1 Ahead	70.00	100.0 %	2090	2090
8/3 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	100.0 %	1953	1953
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
10/1 (M1 N/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M1 N/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1 (M1 S/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (M1 S/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Cliffe Lane)	3.90	0.00	Y	Arm 3 Left	Inf	75.0 %	2005	2005
				Arm 9 Left	Inf	25.0 %		

Bonus Green Times

No Bonus Greens are defined For Scenario 5

Scenario 6: '2030 Future Base PM Peak ' (FG6: '2030 Future Base PM Peak', Plan 1: 'Network Control Plan 1')
Lane Saturation Flows

Junction: M1 J22 / A50 / A511								
Lane	Lane Width (m)	Gradient (%)	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Circ Sth)	3.80	0.00	Y	Arm 9 Ahead	Inf	91.9 %	1995	1995
				Arm 13 Ahead	Inf	8.1 %		
1/2 (Circ Sth)	3.80	0.00	N	Arm 3 Right	75.00	12.5 %	2093	2093
				Arm 9 Ahead	75.00	87.5 %		
1/3 (Circ Sth)	3.80	0.00	Y	Arm 3 Right	75.00	100.0 %	1956	1956
2/1 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 9 Left	80.00	95.1 %	1977	1977
				Arm 13 Left	60.00	4.9 %		
2/2 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	0.0 %	1966	1966
				Arm 9 Left	60.00	100.0 %		
2/3 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	100.0 %	1978	1978
3/1 (Circ W)	4.20	0.00	Y	Arm 10 Ahead	75.00	100.0 %	1995	1995
3/2 (Circ W)	4.20	0.00	N	Arm 5 Right	75.00	0.5 %	2132	2132
				Arm 10 Ahead	75.00	99.5 %		
3/3 (Circ W)	4.20	0.00	Y	Arm 5 Right	75.00	100.0 %	1995	1995
4/1 (A511 E/B)	4.10	0.00	Y	Arm 10 Left	50.00	100.0 %	1966	1966
4/2 (A511 E/B)	4.10	0.00	N	Arm 5 Ahead	70.00	100.0 %	2120	2120
				Arm 10 Ahead	70.00	100.0 %		
4/3 (A511 E/B)	4.10	0.00	Y	Arm 5 Ahead	70.00	100.0 %	1983	1983
5/1 (Circ Nth)	4.60	0.00	Y	Arm 11 Ahead	75.00	100.0 %	2034	2034
5/2 (Circ Nth)	4.60	0.00	Y	Arm 7 Right	75.00	89.6 %	2034	2034
				Arm 11 Ahead	75.00	10.4 %		
6/1 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 11 Left	80.00	100.0 %	2027	2027
6/2 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	20.9 %	2027	2027
				Arm 11 Left	80.00	79.1 %		
6/3 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	100.0 %	2027	2027
7/1 (Circ E)	4.50	0.00	Y	Arm 12 Ahead	Inf	100.0 %	2065	2065
7/2 (Circ E)	4.50	0.00	N	Arm 1 Right	75.00	54.7 %	2181	2181
				Arm 12 Ahead	Inf	45.3 %		

Detailed Input Data And Results

7/3 (Circ E)	4.50	0.00	Y	Arm 1 Right	75.00	100.0 %	2025	2025
8/1 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	92.0 %	1953	1953
				Arm 12 Left	70.00	8.0 %		
8/2 (A50 W/B)	3.80	0.00	N	Arm 1 Ahead	70.00	100.0 %	2090	2090
8/3 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	100.0 %	1953	1953
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
10/1 (M1 N/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M1 N/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1 (M1 S/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (M1 S/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Cliffe Lane)	3.90	0.00	Y	Arm 3 Left	Inf	85.7 %	2005	2005
				Arm 9 Left	Inf	14.3 %		

Bonus Green Times

No Bonus Greens are defined For Scenario 6

Scenario 7: '2036 Future Base AM Peak' (FG7: '2036 Future Base AM Peak', Plan 1: 'Network Control Plan 1')
Lane Saturation Flows

Junction: M1 J22 / A50 / A511								
Lane	Lane Width (m)	Gradient (%)	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Circ Sth)	3.80	0.00	Y	Arm 9 Ahead	Inf	83.4 %	1995	1995
				Arm 13 Ahead	Inf	16.6 %		
1/2 (Circ Sth)	3.80	0.00	N	Arm 3 Right	75.00	33.5 %	2093	2093
				Arm 9 Ahead	75.00	66.5 %		
1/3 (Circ Sth)	3.80	0.00	Y	Arm 3 Right	75.00	100.0 %	1956	1956
2/1 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 9 Left	80.00	93.3 %	1977	1977
				Arm 13 Left	60.00	6.7 %		
2/2 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	0.0 %	1966	1966
				Arm 9 Left	60.00	100.0 %		
2/3 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	100.0 %	1978	1978
3/1 (Circ W)	4.20	0.00	Y	Arm 10 Ahead	75.00	100.0 %	1995	1995
3/2 (Circ W)	4.20	0.00	N	Arm 5 Right	75.00	0.5 %	2132	2132
				Arm 10 Ahead	75.00	99.5 %		
3/3 (Circ W)	4.20	0.00	Y	Arm 5 Right	75.00	100.0 %	1995	1995
4/1 (A511 E/B)	4.10	0.00	Y	Arm 10 Left	50.00	100.0 %	1966	1966
4/2 (A511 E/B)	4.10	0.00	N	Arm 5 Ahead	70.00	100.0 %	2120	2120
4/3 (A511 E/B)	4.10	0.00	Y	Arm 5 Ahead	70.00	100.0 %	1983	1983
5/1 (Circ Nth)	4.60	0.00	Y	Arm 11 Ahead	75.00	100.0 %	2034	2034
5/2 (Circ Nth)	4.60	0.00	Y	Arm 7 Right	75.00	86.6 %	2034	2034
				Arm 11 Ahead	75.00	13.4 %		
6/1 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 11 Left	80.00	100.0 %	2027	2027
6/2 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	24.8 %	2027	2027
				Arm 11 Left	80.00	75.2 %		
6/3 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	100.0 %	2027	2027
7/1 (Circ E)	4.50	0.00	Y	Arm 12 Ahead	Inf	100.0 %	2065	2065
7/2 (Circ E)	4.50	0.00	N	Arm 1 Right	75.00	53.8 %	2182	2182
				Arm 12 Ahead	Inf	46.2 %		

Detailed Input Data And Results

7/3 (Circ E)	4.50	0.00	Y	Arm 1 Right	75.00	100.0 %	2025	2025
8/1 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	89.6 %	1953	1953
				Arm 12 Left	70.00	10.4 %		
8/2 (A50 W/B)	3.80	0.00	N	Arm 1 Ahead	70.00	100.0 %	2090	2090
8/3 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	100.0 %	1953	1953
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
10/1 (M1 N/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M1 N/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1 (M1 S/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (M1 S/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Cliffe Lane)	3.90	0.00	Y	Arm 3 Left	Inf	76.2 %	2005	2005
				Arm 9 Left	Inf	23.8 %		

Bonus Green Times

No Bonus Greens are defined For Scenario 7

Scenario 8: '2036 Future Base PM Peak ' (FG8: '2036 Future Base PM Peak', Plan 1: 'Network Control Plan 1')
Lane Saturation Flows

Junction: M1 J22 / A50 / A511								
Lane	Lane Width (m)	Gradient (%)	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Circ Sth)	3.80	0.00	Y	Arm 9 Ahead	Inf	88.3 %	1995	1995
				Arm 13 Ahead	Inf	11.7 %		
1/2 (Circ Sth)	3.80	0.00	N	Arm 3 Right	75.00	15.0 %	2093	2093
				Arm 9 Ahead	75.00	85.0 %		
1/3 (Circ Sth)	3.80	0.00	Y	Arm 3 Right	75.00	100.0 %	1956	1956
2/1 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 9 Left	80.00	93.1 %	1977	1977
				Arm 13 Left	60.00	6.9 %		
2/2 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	0.0 %	1966	1966
				Arm 9 Left	60.00	100.0 %		
2/3 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	100.0 %	1978	1978
3/1 (Circ W)	4.20	0.00	Y	Arm 10 Ahead	75.00	100.0 %	1995	1995
3/2 (Circ W)	4.20	0.00	N	Arm 5 Right	75.00	0.6 %	2132	2132
				Arm 10 Ahead	75.00	99.4 %		
3/3 (Circ W)	4.20	0.00	Y	Arm 5 Right	75.00	100.0 %	1995	1995
4/1 (A511 E/B)	4.10	0.00	Y	Arm 10 Left	50.00	100.0 %	1966	1966
4/2 (A511 E/B)	4.10	0.00	N	Arm 5 Ahead	70.00	100.0 %	2120	2120
				Arm 10 Ahead	70.00	100.0 %		
4/3 (A511 E/B)	4.10	0.00	Y	Arm 5 Ahead	70.00	100.0 %	1983	1983
5/1 (Circ Nth)	4.60	0.00	Y	Arm 11 Ahead	75.00	100.0 %	2034	2034
5/2 (Circ Nth)	4.60	0.00	Y	Arm 7 Right	75.00	91.0 %	2034	2034
				Arm 11 Ahead	75.00	9.0 %		
6/1 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 11 Left	80.00	100.0 %	2027	2027
6/2 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	20.8 %	2027	2027
				Arm 11 Left	80.00	79.2 %		
6/3 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	100.0 %	2027	2027
7/1 (Circ E)	4.50	0.00	Y	Arm 12 Ahead	Inf	100.0 %	2065	2065
7/2 (Circ E)	4.50	0.00	N	Arm 1 Right	75.00	63.0 %	2178	2178
				Arm 12 Ahead	Inf	37.0 %		

Detailed Input Data And Results

7/3 (Circ E)	4.50	0.00	Y	Arm 1 Right	75.00	100.0 %	2025	2025
8/1 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	92.5 %	1953	1953
				Arm 12 Left	70.00	7.5 %		
8/2 (A50 W/B)	3.80	0.00	N	Arm 1 Ahead	70.00	100.0 %	2090	2090
8/3 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	100.0 %	1953	1953
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
10/1 (M1 N/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M1 N/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1 (M1 S/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (M1 S/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Cliffe Lane)	3.90	0.00	Y	Arm 3 Left	Inf	86.6 %	2005	2005
				Arm 9 Left	Inf	13.4 %		

Bonus Green Times

No Bonus Greens are defined For Scenario 8

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2025 Baseline AM Peak'	08:00	09:00	01:00	
2: '2025 Baseline PM Peak'	17:00	18:00	01:00	
3: '2028 Future Base AM Peak'	08:00	09:00	01:00	
4: '2028 Future Base PM Peak'	17:00	18:00	01:00	
5: '2030 Future Base AM Peak'	08:00	09:00	01:00	
6: '2030 Future Base PM Peak'	17:00	18:00	01:00	
7: '2036 Future Base AM Peak'	08:00	09:00	01:00	
8: '2036 Future Base PM Peak'	17:00	18:00	01:00	

Traffic Flows, Desired**FG1: '2025 Baseline AM Peak'****Desired Flow :**

	Destination						
		A	B	C	D	E	Tot.
Origin	A	1	1092	132	79	319	1623
	B	957	4	59	8	818	1846
	C	2	32	0	18	740	792
	D	88	11	7	1	32	139
	E	338	718	501	0	4	1561
	Tot.	1386	1857	699	106	1913	5961

FG2: '2025 Baseline PM Peak'**Desired Flow :**

	Destination						
		A	B	C	D	E	Tot.
Origin	A	1	906	87	56	297	1347
	B	731	4	52	23	897	1707
	C	0	37	4	33	759	833
	D	72	15	8	0	12	107
	E	300	747	480	1	7	1535
	Tot.	1104	1709	631	113	1972	5529

FG3: '2028 Future Base AM Peak'**Desired Flow :**

	Destination						
		A	B	C	D	E	Tot.
Origin	A	1	1049	142	106	383	1681
	B	985	4	65	11	1021	2086
	C	2	28	0	22	795	847
	D	93	11	8	1	39	152
	E	363	776	570	0	6	1715
	Tot.	1444	1868	785	140	2244	6481

Detailed Input Data And Results

FG4: '2028 Future Base PM Peak'

Desired Flow :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	1	909	98	47	475	1530
	B	721	3	43	14	1131	1912
	C	0	25	3	18	863	909
	D	87	13	8	0	19	127
	E	363	702	506	1	10	1582
	Tot.	1172	1652	658	80	2498	6060

FG5: '2030 Future Base AM Peak'

Desired Flow :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	1	1073	149	110	379	1712
	B	1028	4	69	12	1022	2135
	C	2	29	0	23	794	848
	D	98	11	9	2	40	160
	E	368	777	578	0	5	1728
	Tot.	1497	1894	805	147	2240	6583

FG6: '2030 Future Base PM Peak'

Desired Flow :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	1	942	110	54	467	1574
	B	771	4	51	17	1150	1993
	C	0	27	4	22	869	922
	D	100	16	10	0	21	147
	E	350	677	530	1	9	1567
	Tot.	1222	1666	705	94	2516	6203

FG7: '2036 Future Base AM Peak'

Desired Flow :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	1	1159	164	140	405	1869
	B	1124	4	71	14	1031	2244
	C	2	29	0	28	801	860
	D	103	11	9	2	39	164
	E	391	769	578	0	5	1743
	Tot.	1621	1972	822	184	2281	6880

Detailed Input Data And Results

FG8: '2036 Future Base PM Peak'

Desired Flow :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	2	1017	118	86	518	1741
	B	831	3	49	24	1147	2054
	C	0	25	3	31	860	919
	D	132	18	12	0	25	187
	E	373	645	510	1	9	1538
	Tot.	1338	1708	692	142	2559	6439

Scenario 1: '2025 Baseline AM Peak' (FG1: '2025 Baseline AM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	1	1092	132	79	319	1623
	B	957	4	59	8	818	1846
	C	2	32	0	18	740	792
	D	88	11	7	1	32	139
	E	338	718	501	0	4	1561
	Tot.	1386	1857	699	106	1913	5961

Traffic Flows, Difference

Difference :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	0	0	0	0	0	0
	B	0	0	0	0	0	0
	C	0	0	0	0	0	0
	D	0	0	0	0	0	0
	E	0	0	0	0	0	0
	Tot.	0	0	0	0	0	0

Detailed Input Data And Results

Scenario 2: '2025 Baseline PM Peak ' (FG2: '2025 Baseline PM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	1	906	87	56	297	1347
	B	731	4	52	23	897	1707
	C	0	37	4	33	759	833
	D	72	15	8	0	12	107
	E	300	747	480	1	7	1535
	Tot.	1104	1709	631	113	1972	5529

Traffic Flows, Difference

Difference :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	0	0	0	0	0	0
	B	0	0	0	0	0	0
	C	0	0	0	0	0	0
	D	0	0	0	0	0	0
	E	0	0	0	0	0	0
	Tot.	0	0	0	0	0	0

Scenario 3: '2028 Future Base AM Peak' (FG3: '2028 Future Base AM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	1	1049	142	106	383	1681
	B	985	4	65	11	1021	2086
	C	2	28	0	22	795	847
	D	93	11	8	1	39	152
	E	363	776	570	0	6	1715
	Tot.	1444	1868	785	140	2244	6481

Traffic Flows, Difference**Difference :**

	Destination						
		A	B	C	D	E	Tot.
Origin	A	0	0	0	0	0	0
	B	0	0	0	0	0	0
	C	0	0	0	0	0	0
	D	0	0	0	0	0	0
	E	0	0	0	0	0	0
	Tot.	0	0	0	0	0	0

Scenario 4: '2028 Future Base PM Peak' (FG4: '2028 Future Base PM Peak', Plan 1: 'Network Control Plan 1')**Traffic Flows, Actual****Actual Flow :**

	Destination						
		A	B	C	D	E	Tot.
Origin	A	1	909	98	47	475	1530
	B	721	3	43	14	1131	1912
	C	0	25	3	18	863	909
	D	87	13	8	0	19	127
	E	363	702	506	1	10	1582
	Tot.	1172	1652	658	80	2498	6060

Traffic Flows, Difference**Difference :**

	Destination						
		A	B	C	D	E	Tot.
Origin	A	0	0	0	0	0	0
	B	0	0	0	0	0	0
	C	0	0	0	0	0	0
	D	0	0	0	0	0	0
	E	0	0	0	0	0	0
	Tot.	0	0	0	0	0	0

Detailed Input Data And Results

Scenario 5: '2030 Future Base AM Peak' (FG5: '2030 Future Base AM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	1	1073	149	110	379	1712
	B	1028	4	69	12	1022	2135
	C	2	29	0	23	794	848
	D	98	11	9	2	40	160
	E	368	777	578	0	5	1728
	Tot.	1497	1894	805	147	2240	6583

Traffic Flows, Difference

Difference :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	0	0	0	0	0	0
	B	0	0	0	0	0	0
	C	0	0	0	0	0	0
	D	0	0	0	0	0	0
	E	0	0	0	0	0	0
	Tot.	0	0	0	0	0	0

Scenario 6: '2030 Future Base PM Peak ' (FG6: '2030 Future Base PM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	1	942	110	54	467	1574
	B	771	4	51	17	1150	1993
	C	0	27	4	22	869	922
	D	100	16	10	0	21	147
	E	350	677	530	1	9	1567
	Tot.	1222	1666	705	94	2516	6203

Traffic Flows, Difference**Difference :**

	Destination						
		A	B	C	D	E	Tot.
Origin	A	0	0	0	0	0	0
	B	0	0	0	0	0	0
	C	0	0	0	0	0	0
	D	0	0	0	0	0	0
	E	0	0	0	0	0	0
	Tot.	0	0	0	0	0	0

Scenario 7: '2036 Future Base AM Peak' (FG7: '2036 Future Base AM Peak', Plan 1: 'Network Control Plan 1')**Traffic Flows, Actual****Actual Flow :**

	Destination						
		A	B	C	D	E	Tot.
Origin	A	1	1159	164	140	405	1869
	B	1124	4	71	14	1031	2244
	C	2	29	0	28	801	860
	D	103	11	9	2	39	164
	E	391	769	578	0	5	1743
	Tot.	1621	1972	822	184	2281	6880

Traffic Flows, Difference**Difference :**

	Destination						
		A	B	C	D	E	Tot.
Origin	A	0	0	0	0	0	0
	B	0	0	0	0	0	0
	C	0	0	0	0	0	0
	D	0	0	0	0	0	0
	E	0	0	0	0	0	0
	Tot.	0	0	0	0	0	0

Detailed Input Data And Results

Scenario 8: '2036 Future Base PM Peak ' (FG8: '2036 Future Base PM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	2	1017	118	86	518	1741
	B	831	3	49	24	1147	2054
	C	0	25	3	31	860	919
	D	132	18	12	0	25	187
	E	373	645	510	1	9	1538
	Tot.	1338	1708	692	142	2559	6439

Traffic Flows, Difference

Difference :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	0	0	0	0	0	0
	B	0	0	0	0	0	0
	C	0	0	0	0	0	0
	D	0	0	0	0	0	0
	E	0	0	0	0	0	0
	Tot.	0	0	0	0	0	0

Traffic Lane Flows

Lane	Scenario 1: 2025 Baseline AM Peak	Scenario 2: 2025 Baseline PM Peak	Scenario 3: 2028 Future Base AM Peak	Scenario 4: 2028 Future Base PM Peak	Scenario 5: 2030 Future Base AM Peak	Scenario 6: 2030 Future Base PM Peak
Junction: M1 J22 / A50 / A511						
1/1	756	701	870	858	880	884
1/2	829	759	936	929	950	930
1/3	606	557	712	616	733	660
2/1 (short)	380	397	410	442	410	447
2/2 (with short)	758(In) 378(Out)	792(In) 395(Out)	817(In) 407(Out)	881(In) 439(Out)	817(In) 407(Out)	891(In) 444(Out)
2/3	34	41	30	28	31	31
3/1	428	245	367	195	392	215
3/2 (with short)	675(In) 627(Out)	627(In) 563(Out)	766(In) 716(Out)	666(In) 617(Out)	792(In) 741(Out)	718(In) 660(Out)
3/3 (short)	48	64	50	49	51	58
4/1 (short)	338	300	363	363	368	350
4/2 (with short)	991(In) 653(Out)	963(In) 663(Out)	1078(In) 715(Out)	1021(In) 658(Out)	1088(In) 720(Out)	1007(In) 657(Out)
4/3	570	572	637	561	640	560
5/1	660	667	717	661	724	660
5/2	618	636	687	610	691	618
6/1 (short)	590	483	594	503	608	526
6/2 (with short)	1180(In) 590(Out)	966(In) 483(Out)	1188(In) 594(Out)	1007(In) 504(Out)	1216(In) 608(Out)	1052(In) 526(Out)
6/3	443	381	493	523	496	522
7/1	581	483	692	468	674	411
7/2 (with short)	463(In) 258(Out)	458(In) 281(Out)	525(In) 289(Out)	681(In) 404(Out)	559(In) 321(Out)	775(In) 537(Out)
7/3 (short)	205	177	236	277	238	238
8/1 (with short)	1241(In) 616(Out)	1151(In) 568(Out)	1375(In) 674(Out)	1297(In) 644(Out)	1403(In) 690(Out)	1334(In) 641(Out)
8/2 (short)	625	583	701	653	713	693
8/3	605	556	711	615	732	659
9/1	1062	997	1179	1239	1183	1258
9/2	851	975	1065	1259	1057	1258
10/1	766	545	730	558	760	565
10/2	620	559	714	614	737	657
11/1	1250	1150	1311	1164	1332	1186
11/2	607	559	557	488	562	480
12/1	640	535	757	511	743	462
12/2	59	96	28	147	62	243

Detailed Input Data And Results

13/1	106	113	140	80	147	94
14/1	139	107	152	127	160	147

Detailed Input Data And Results

Lane	Scenario 7: 2036 Future Base AM Peak	Scenario 8: 2036 Future Base PM Peak
Junction: M1 J22 / A50 / A511		
1/1	942	950
1/2	985	982
1/3	799	689
2/1 (short)	416	447
2/2 (with short)	829(In) 413(Out)	891(In) 444(Out)
2/3	31	28
3/1	425	274
3/2 (with short)	860(In) 809(Out)	752(In) 695(Out)
3/3 (short)	51	57
4/1 (short)	391	373
4/2 (with short)	1108(In) 717(Out)	1007(In) 634(Out)
4/3	635	531
5/1	721	638
5/2	686	588
6/1 (short)	661	567
6/2 (with short)	1323(In) 662(Out)	1135(In) 568(Out)
6/3	546	606
7/1	467	440
7/2 (with short)	837(In) 615(Out)	819(In) 549(Out)
7/3 (short)	222	270
8/1 (with short)	1446(In) 682(Out)	1367(In) 653(Out)
8/2 (short)	764	714
8/3	798	687
9/1	1213	1280
9/2	1068	1279
10/1	816	647
10/2	805	691
11/1	1382	1205
11/2	590	503
12/1	538	489
12/2	284	203
13/1	184	142

Detailed Input Data And Results

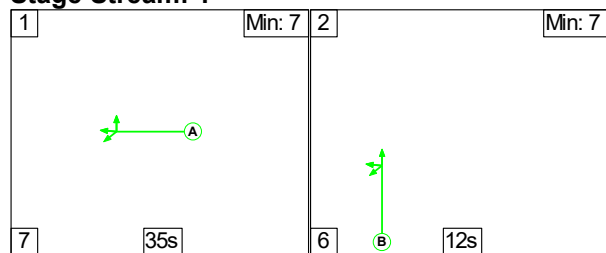
14/1	164	187
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Scenario 1: '2025 Baseline AM Peak' (FG1: '2025 Baseline AM Peak', Plan 1: 'Network Control Plan 1')

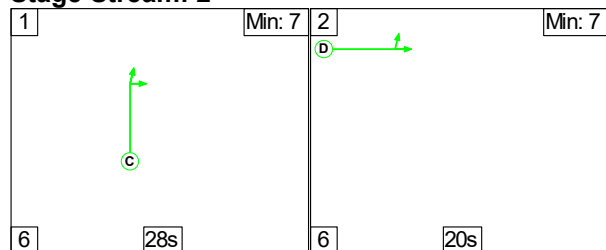
Controller :C1 - M1/J22 A50/A511 Controller 1

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

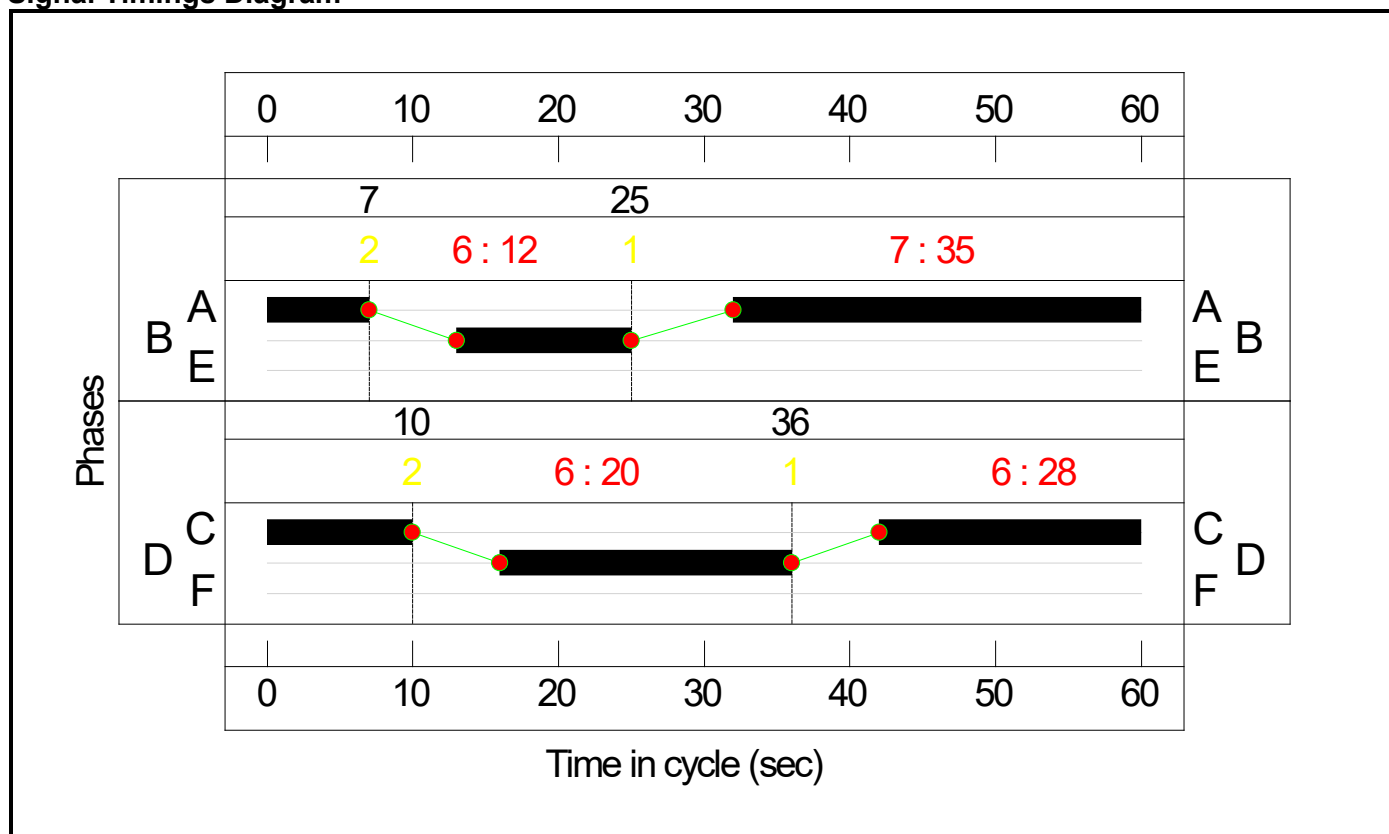
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Duration	35	12
Change Point	25	7

Stage Stream: 2

Stage	1	2
Duration	28	20
Change Point	36	10

Phase Timings

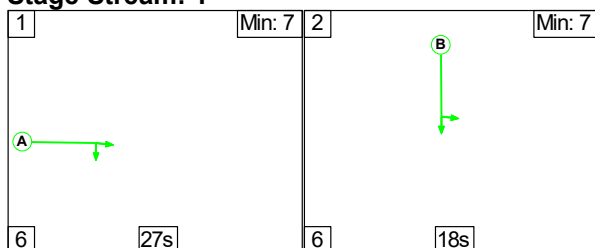
Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Sth Right Ahead Ahead2	Traffic	1	35	32	7
B	M1 N/B Off-slip Ahead Left Left2	Traffic	1	12	13	25
C	Circ W Right Ahead	Traffic	2	28	42	10
D	A511 E/B Ahead Left	Traffic	2	20	16	36
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

Signal Timings Diagram

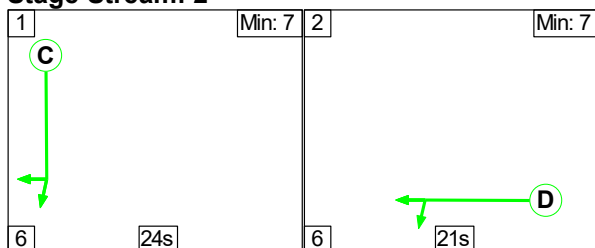
Controller :C2 - M1/J22 A50/A511 Controller 2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2

**Stage Timings**

Stage Stream: 1

Stage	1	2
Duration	27	18
Change Point	30	6

Detailed Input Data And Results

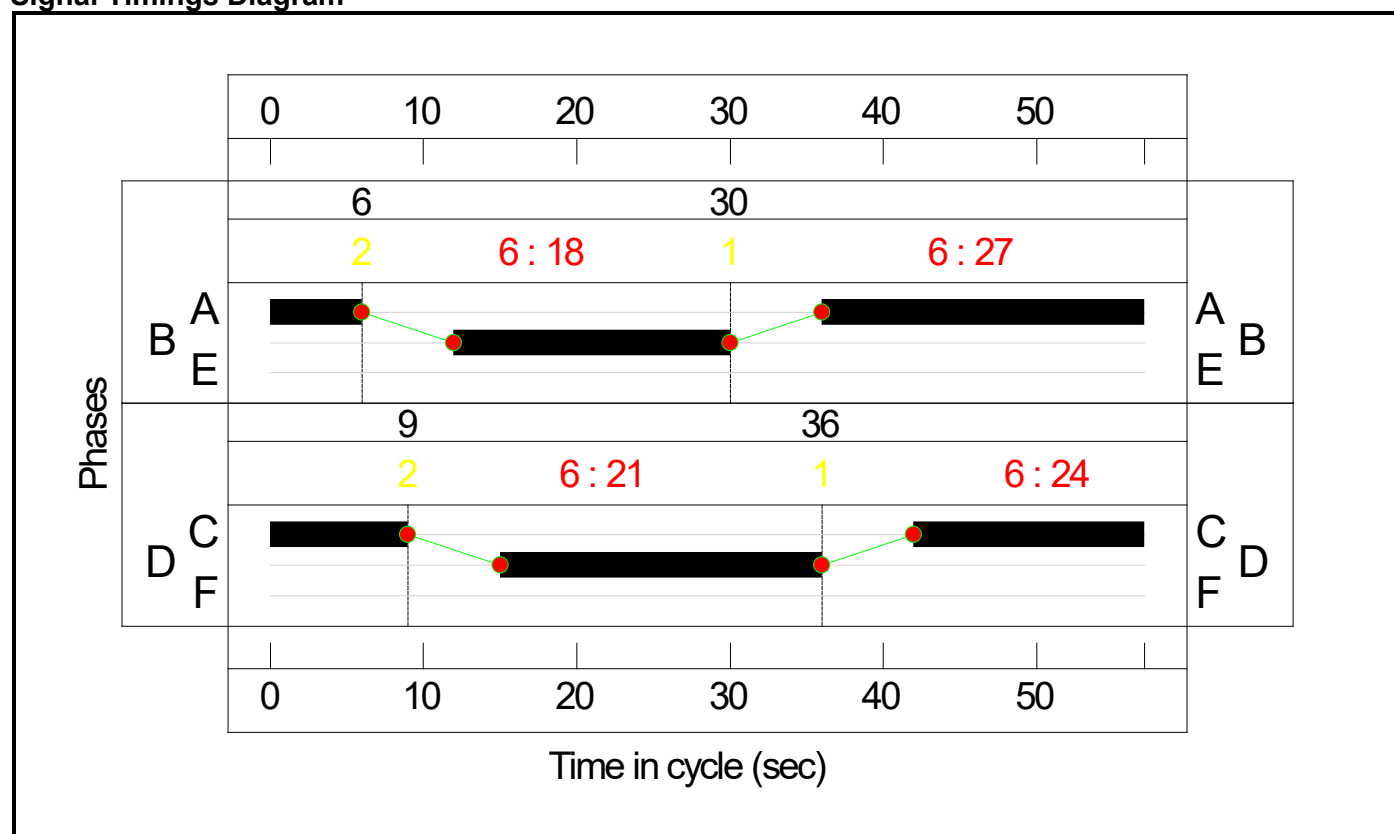
Stage Stream: 2

Stage	1	2
Duration	24	21
Change Point	36	9

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Nth Right Ahead	Traffic	1	27	36	6
B	M1 S/B Off Slip Ahead Left	Traffic	1	18	12	30
C	Circ E Right Ahead	Traffic	2	24	42	9
D	A50 W/B Ahead Left	Traffic	2	21	15	36
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

Signal Timings Diagram



Lane Green Times

Junction: M1 J22 / A50 / A511					
Lane	Description	Type	Phases	Start Green	End Green
1/1	Circ Sth Ahead Ahead2	U	A	32	7
1/2	Circ Sth Right Ahead	U	A	32	7
1/3	Circ Sth Right	U	A	32	7
2/1	M1 N/B Off-slip Left Left2	U	B	13	25
2/2	M1 N/B Off-slip Ahead Left	U	B	13	25
2/3	M1 N/B Off-slip Ahead	U	B	13	25
3/1	Circ W Ahead	U	C	42	10
3/2	Circ W Right Ahead	U	C	42	10
3/3	Circ W Right	U	C	42	10
4/1	A511 E/B Left	U	D	16	36
4/2	A511 E/B Ahead	U	D	16	36
4/3	A511 E/B Ahead	U	D	16	36
5/1	Circ Nth Ahead	U	A	36	6
5/2	Circ Nth Right Ahead	U	A	36	6
6/1	M1 S/B Off Slip Left	U	B	12	30
6/2	M1 S/B Off Slip Ahead Left	U	B	12	30
6/3	M1 S/B Off Slip Ahead	U	B	12	30
7/1	Circ E Ahead	U	C	42	9
7/2	Circ E Right Ahead	U	C	42	9
7/3	Circ E Right	U	C	42	9
8/1	A50 W/B Ahead Left	U	D	15	36
8/2	A50 W/B Ahead	U	D	15	36
8/3	A50 W/B Ahead	U	D	15	36

Detailed Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Bonus Green	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	-	88.7%
M1 J22 / A50 / A511	-	-	N/A	-	-		-	-	-	-	-	-	-	88.7%
1/1	Circ Sth Ahead Ahead2	U	1:1	N/A	C1:A		1	35	-	-	756	1995	1197	63.2%
1/2	Circ Sth Right Ahead	U	1:1	N/A	C1:A		1	35	-	-	829	2093	1256	66.0%
1/3	Circ Sth Right	U	1:1	N/A	C1:A		1	35	-	-	606	1956	1174	51.6%
2/2+2/1	M1 N/B Off-slip Ahead Left Left2	U	1:1	N/A	C1:B		1	12	-	-	758	1966:1977	426+428	88.7 : 88.7%
2/3	M1 N/B Off-slip Ahead	U	1:1	N/A	C1:B		1	12	-	-	34	1978	429	7.9%
3/1	Circ W Ahead	U	1:2	N/A	C1:C		1	28	-	-	428	1995	964	44.4%
3/2+3/3	Circ W Right Ahead	U	1:2	N/A	C1:C		1	28	-	-	675	2132:1995	973+74	64.5 : 64.5%
4/2+4/1	A511 E/B Ahead Left	U	1:2	N/A	C1:D		1	20	-	-	991	2120:1966	742+384	88.0 : 88.0%
4/3	A511 E/B Ahead	U	1:2	N/A	C1:D		1	20	-	-	570	1983	694	82.1%
5/1	Circ Nth Ahead	U	2:1	N/A	C2:A		1	27	-	-	660	2034	999	66.1%
5/2	Circ Nth Right Ahead	U	2:1	N/A	C2:A		1	27	-	-	618	2034	999	61.9%
6/2+6/1	M1 S/B Off Slip Ahead Left	U	2:1	N/A	C2:B		1	18	-	-	1180	2027:2027	676+676	87.3 : 87.3%
6/3	M1 S/B Off Slip Ahead	U	2:1	N/A	C2:B		1	18	-	-	443	2027	676	65.6%
7/1	Circ E Ahead	U	2:2	N/A	C2:C		1	24	-	-	581	2065	906	64.1%
7/2+7/3	Circ E Right Ahead	U	2:2	N/A	C2:C		1	24	-	-	463	2172:2025	752+598	34.3 : 34.3%

Detailed Input Data And Results

8/1+8/2	A50 W/B Ahead Left	U	2:2	N/A	C2:D		1	21	-	-	1241	1953:2090	702+712	87.8 : 87.8%
8/3	A50 W/B Ahead	U	2:2	N/A	C2:D		1	21	-	-	605	1953	754	80.3%
9/1		U	N/A	N/A	-		-	-	-	-	1062	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	-	851	Inf	Inf	0.0%
10/1	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	766	Inf	Inf	0.0%
10/2	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	620	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	-	1250	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	-	607	Inf	Inf	0.0%
12/1	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	640	Inf	Inf	0.0%
12/2	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	59	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	-	106	Inf	Inf	0.0%
14/1	Cliffe Lane Left Left2	O	N/A	N/A	-		-	-	-	-	139	2005	297	46.8%

Detailed Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
Network	-	-	105	34	0	41.5	19.5	0.0	61.0	-	-	-	-	
M1 J22 / A50 / A511	-	-	105	34	0	41.5	19.5	0.0	61.0	-	-	-	-	
1/1	756	756	-	-	-	1.6	0.0	-	1.6	7.7	8.0	0.0	8.0	
1/2	829	829	-	-	-	1.8	0.0	-	1.8	8.0	9.0	0.0	9.0	
1/3	606	606	-	-	-	1.2	0.0	-	1.2	7.0	5.7	0.0	5.7	
2/2+2/1	758	758	-	-	-	4.8	3.7	-	8.5	40.2	6.1	3.7	9.8	
2/3	34	34	-	-	-	0.2	0.0	-	0.2	23.4	0.4	0.0	0.5	
3/1	428	428	-	-	-	0.6	0.0	-	0.6	5.2	1.6	0.0	1.6	
3/2+3/3	675	675	-	-	-	1.0	0.0	-	1.0	5.4	2.4	0.0	2.4	
4/2+4/1	991	991	-	-	-	4.8	3.5	-	8.2	30.0	10.2	3.5	13.6	
4/3	570	570	-	-	-	2.8	2.2	-	5.0	31.8	8.5	2.2	10.8	
5/1	660	660	-	-	-	2.0	0.0	-	2.0	10.9	7.7	0.0	7.7	
5/2	618	618	-	-	-	1.8	0.0	-	1.8	10.6	7.0	0.0	7.0	
6/2+6/1	1180	1180	-	-	-	5.9	3.3	-	9.2	28.0	8.7	3.3	12.0	
6/3	443	443	-	-	-	2.0	0.9	-	2.9	23.9	5.9	0.9	6.9	
7/1	581	581	-	-	-	0.8	0.0	-	0.8	4.9	2.7	0.0	2.7	
7/2+7/3	463	463	-	-	-	2.0	0.0	-	2.0	15.8	3.9	0.0	3.9	
8/1+8/2	1241	1241	-	-	-	5.3	3.4	-	8.8	25.5	8.7	3.4	12.2	
8/3	605	605	-	-	-	2.6	2.0	-	4.6	27.4	8.4	2.0	10.4	
9/1	1062	1062	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/2	851	851	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	766	766	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/2	620	620	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	1250	1250	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

Detailed Input Data And Results

11/2	607	607	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/1	640	640	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/2	59	59	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
13/1	106	106	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
14/1	139	139	105	34	0	0.2	0.4	-	0.7	16.9	1.2	0.4	1.7	
C1 - M1/J22 A50/A511 Controller 1 Stream: 1 PRC for Signalled Lanes (%) 1.4 Total Delay for Signalled Lanes (pcuHr): 13.30 Cycle Time (s): 60														
C1 - M1/J22 A50/A511 Controller 1 Stream: 2 PRC for Signalled Lanes (%) 2.3 Total Delay for Signalled Lanes (pcuHr): 14.92 Cycle Time (s): 60														
C2 - M1/J22 A50/A511 Controller 2 Stream: 1 PRC for Signalled Lanes (%) 3.1 Total Delay for Signalled Lanes (pcuHr): 15.94 Cycle Time (s): 57														
C2 - M1/J22 A50/A511 Controller 2 Stream: 2 PRC for Signalled Lanes (%) 2.6 Total Delay for Signalled Lanes (pcuHr): 16.21 Cycle Time (s): 57														
PRC Over All Lanes (%) 1.4 Total Delay Over All Lanes(pcuHr): 61.02														

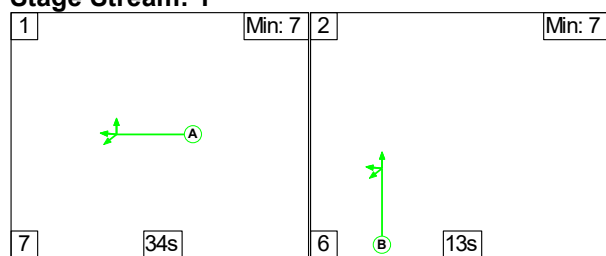
Detailed Input Data And Results

Scenario 2: '2025 Baseline PM Peak ' (FG2: '2025 Baseline PM Peak', Plan 1: 'Network Control Plan 1')

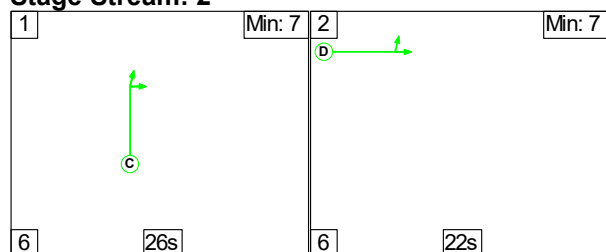
Controller :C1 - M1/J22 A50/A511 Controller 1

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	34	13
Change Point	1	42

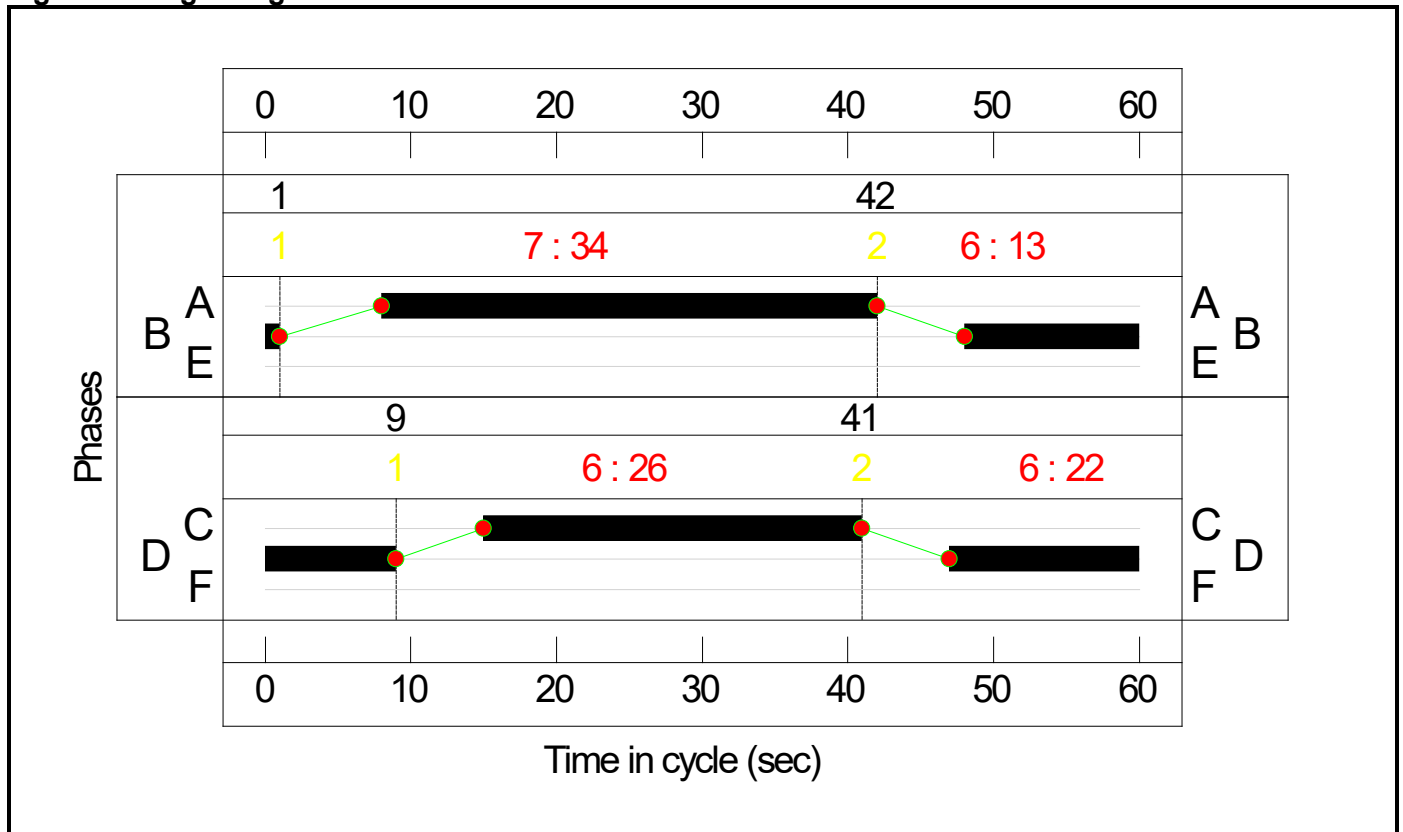
Stage Stream: 2

Stage	1	2
Duration	26	22
Change Point	9	41

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Sth Right Ahead Ahead2	Traffic	1	34	8	42
B	M1 N/B Off-slip Ahead Left Left2	Traffic	1	13	48	1
C	Circ W Right Ahead	Traffic	2	26	15	41
D	A511 E/B Ahead Left	Traffic	2	22	47	9
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

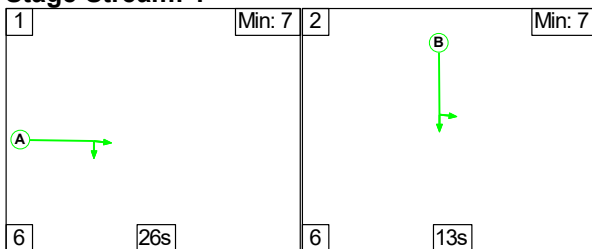
Signal Timings Diagram



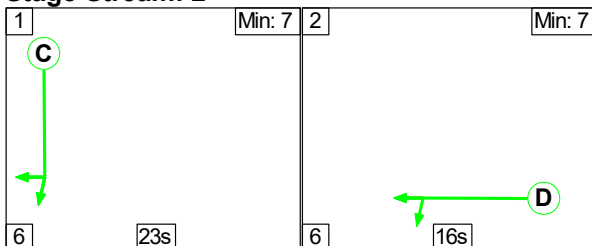
Controller :C2 - M1/J22 A50/A511 Controller 2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	26	13
Change Point	36	17

Detailed Input Data And Results

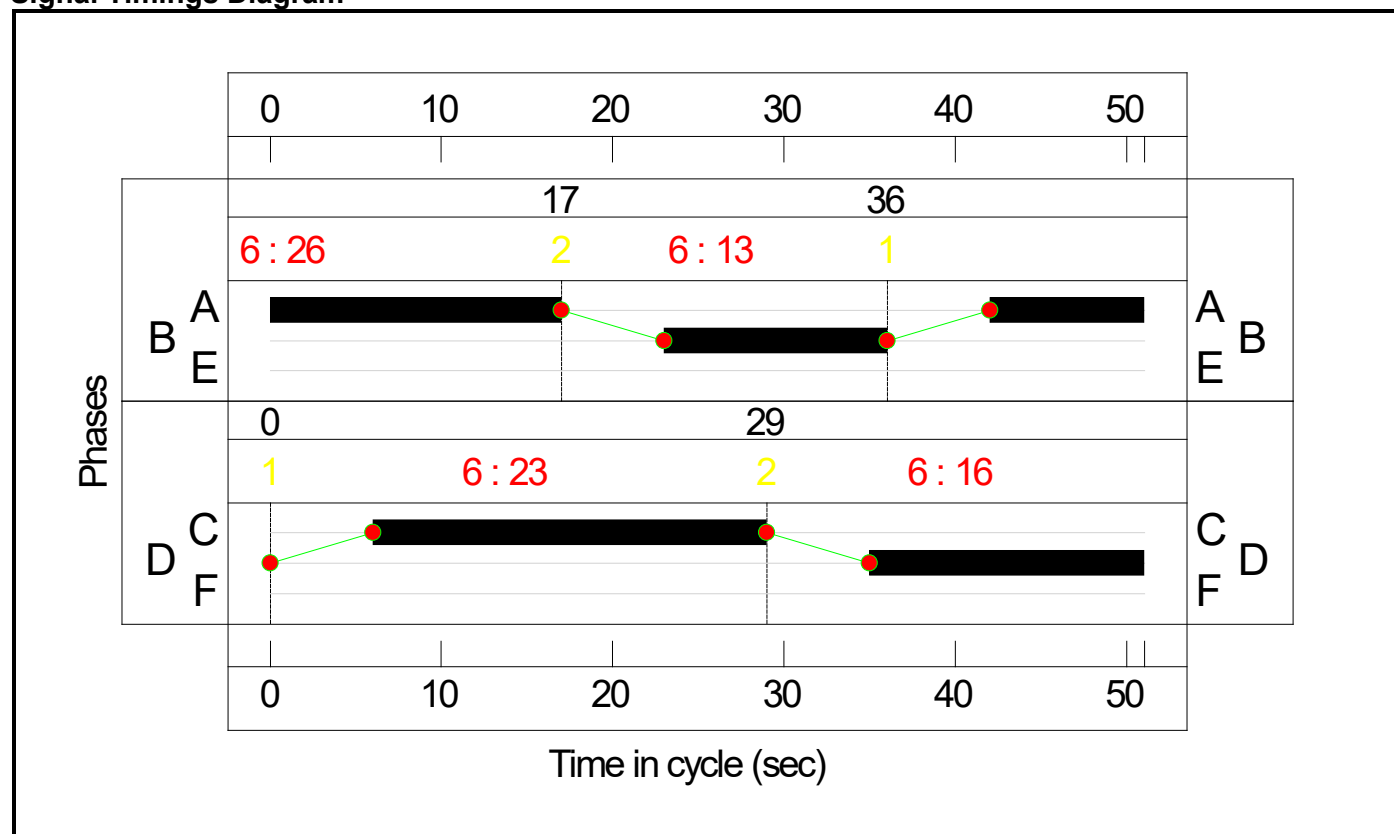
Stage Stream: 2

Stage	1	2
Duration	23	16
Change Point	0	29

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Nth Right Ahead	Traffic	1	26	42	17
B	M1 S/B Off Slip Ahead Left	Traffic	1	13	23	36
C	Circ E Right Ahead	Traffic	2	23	6	29
D	A50 W/B Ahead Left	Traffic	2	16	35	0
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

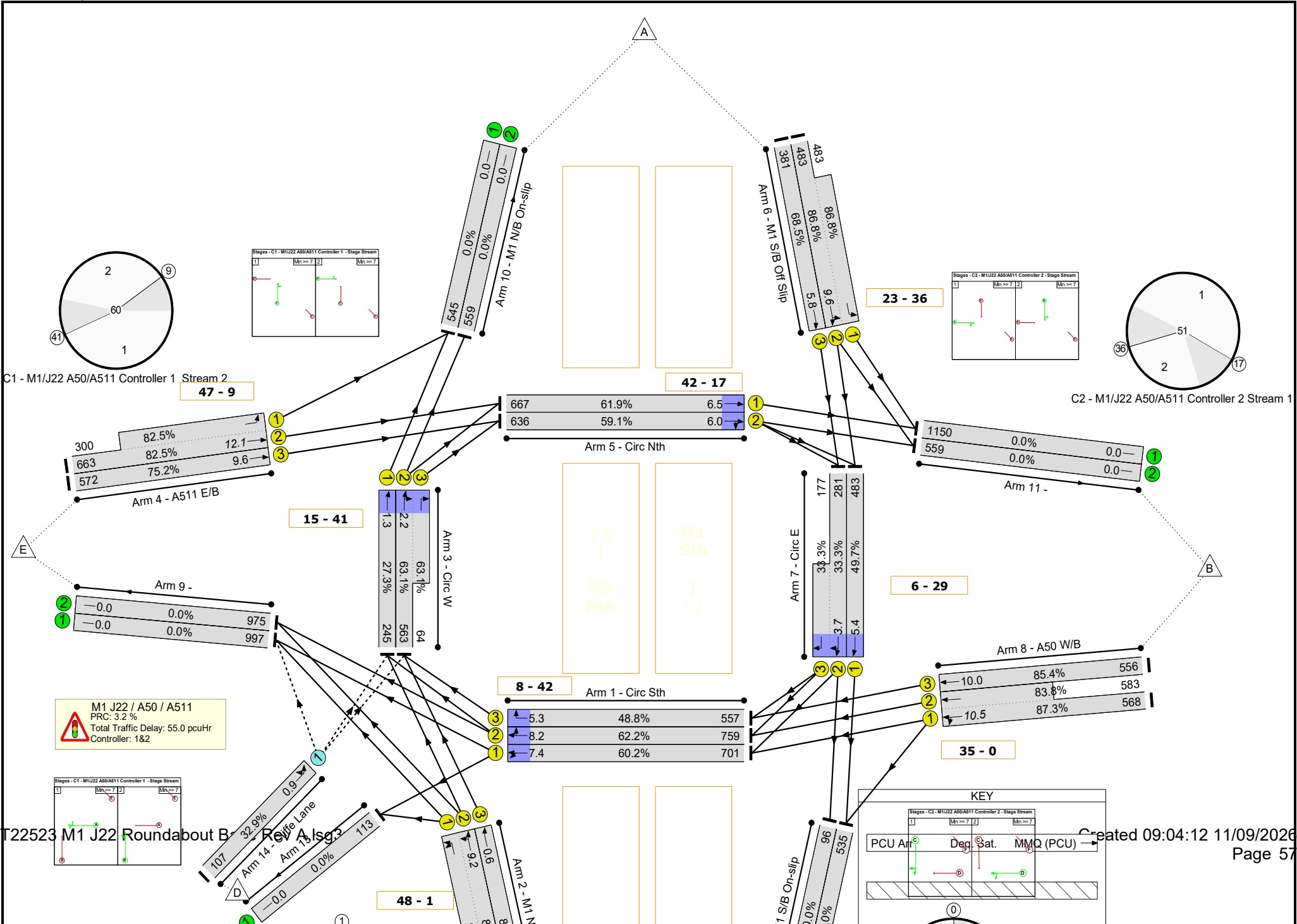
Signal Timings Diagram



Lane Green Times

Junction: M1 J22 / A50 / A511					
Lane	Description	Type	Phases	Start Green	End Green
1/1	Circ Sth Ahead Ahead2	U	A	8	42
1/2	Circ Sth Right Ahead	U	A	8	42
1/3	Circ Sth Right	U	A	8	42
2/1	M1 N/B Off-slip Left Left2	U	B	48	1
2/2	M1 N/B Off-slip Ahead Left	U	B	48	1
2/3	M1 N/B Off-slip Ahead	U	B	48	1
3/1	Circ W Ahead	U	C	15	41
3/2	Circ W Right Ahead	U	C	15	41
3/3	Circ W Right	U	C	15	41
4/1	A511 E/B Left	U	D	47	9
4/2	A511 E/B Ahead	U	D	47	9
4/3	A511 E/B Ahead	U	D	47	9
5/1	Circ Nth Ahead	U	A	42	17
5/2	Circ Nth Right Ahead	U	A	42	17
6/1	M1 S/B Off Slip Left	U	B	23	36
6/2	M1 S/B Off Slip Ahead Left	U	B	23	36
6/3	M1 S/B Off Slip Ahead	U	B	23	36
7/1	Circ E Ahead	U	C	6	29
7/2	Circ E Right Ahead	U	C	6	29
7/3	Circ E Right	U	C	6	29
8/1	A50 W/B Ahead Left	U	D	35	0
8/2	A50 W/B Ahead	U	D	35	0
8/3	A50 W/B Ahead	U	D	35	0

Detailed Input Data And Results



Detailed Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Bonus Green	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	-	87.3%
M1 J22 / A50 / A511	-	-	N/A	-	-		-	-	-	-	-	-	-	87.3%
1/1	Circ Sth Ahead Ahead2	U	1:1	N/A	C1:A		1	34	-	-	701	1995	1164	60.2%
1/2	Circ Sth Right Ahead	U	1:1	N/A	C1:A		1	34	-	-	759	2093	1221	62.2%
1/3	Circ Sth Right	U	1:1	N/A	C1:A		1	34	-	-	557	1956	1141	48.8%
2/2+2/1	M1 N/B Off-slip Ahead Left Left2	U	1:1	N/A	C1:B		1	13	-	-	792	1966:1977	459+461	86.1 : 86.1%
2/3	M1 N/B Off-slip Ahead	U	1:1	N/A	C1:B		1	13	-	-	41	1978	462	8.9%
3/1	Circ W Ahead	U	1:2	N/A	C1:C		1	26	-	-	245	1995	898	27.3%
3/2+3/3	Circ W Right Ahead	U	1:2	N/A	C1:C		1	26	-	-	627	2132:1995	892+101	63.1 : 63.1%
4/2+4/1	A511 E/B Ahead Left	U	1:2	N/A	C1:D		1	22	-	-	963	2120:1966	804+364	82.5 : 82.5%
4/3	A511 E/B Ahead	U	1:2	N/A	C1:D		1	22	-	-	572	1983	760	75.2%
5/1	Circ Nth Ahead	U	2:1	N/A	C2:A		1	26	-	-	667	2034	1077	61.9%
5/2	Circ Nth Right Ahead	U	2:1	N/A	C2:A		1	26	-	-	636	2034	1077	59.1%
6/2+6/1	M1 S/B Off Slip Ahead Left	U	2:1	N/A	C2:B		1	13	-	-	966	2027:2027	556+556	86.8 : 86.8%
6/3	M1 S/B Off Slip Ahead	U	2:1	N/A	C2:B		1	13	-	-	381	2027	556	68.5%
7/1	Circ E Ahead	U	2:2	N/A	C2:C		1	23	-	-	483	2065	972	49.7%
7/2+7/3	Circ E Right Ahead	U	2:2	N/A	C2:C		1	23	-	-	458	2176:2025	845+532	33.3 : 33.3%

Detailed Input Data And Results

8/1+8/2	A50 W/B Ahead Left	U	2:2	N/A	C2:D		1	16	-	-	1151	1953:2090	651+696	87.3 : 83.8%
8/3	A50 W/B Ahead	U	2:2	N/A	C2:D		1	16	-	-	556	1953	651	85.4%
9/1		U	N/A	N/A	-		-	-	-	-	997	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	-	975	Inf	Inf	0.0%
10/1	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	545	Inf	Inf	0.0%
10/2	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	559	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	-	1150	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	-	559	Inf	Inf	0.0%
12/1	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	535	Inf	Inf	0.0%
12/2	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	96	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	-	113	Inf	Inf	0.0%
14/1	Cliffe Lane Left Left2	O	N/A	N/A	-		-	-	-	-	107	2005	325	32.9%

Detailed Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
Network	-	-	87	20	0	38.2	16.9	0.0	55.0	-	-	-	-	
M1 J22 / A50 / A511	-	-	87	20	0	38.2	16.9	0.0	55.0	-	-	-	-	
1/1	701	701	-	-	-	1.6	0.0	-	1.6	8.0	7.4	0.0	7.4	
1/2	759	759	-	-	-	1.7	0.0	-	1.7	8.2	8.2	0.0	8.2	
1/3	557	557	-	-	-	1.1	0.0	-	1.1	7.3	5.3	0.0	5.3	
2/2+2/1	792	792	-	-	-	4.9	3.0	-	7.8	35.5	6.3	3.0	9.2	
2/3	41	41	-	-	-	0.2	0.0	-	0.3	22.3	0.5	0.0	0.6	
3/1	245	245	-	-	-	0.5	0.0	-	0.5	6.9	1.3	0.0	1.3	
3/2+3/3	627	627	-	-	-	1.2	0.0	-	1.2	7.1	2.2	0.0	2.2	
4/2+4/1	963	963	-	-	-	4.2	2.3	-	6.5	24.2	9.8	2.3	12.1	
4/3	572	572	-	-	-	2.5	1.5	-	4.0	25.5	8.1	1.5	9.6	
5/1	667	667	-	-	-	1.6	0.0	-	1.6	8.4	6.5	0.0	6.5	
5/2	636	636	-	-	-	1.5	0.0	-	1.5	8.2	6.0	0.0	6.0	
6/2+6/1	966	966	-	-	-	4.7	3.2	-	7.9	29.4	6.4	3.2	9.6	
6/3	381	381	-	-	-	1.8	1.1	-	2.8	26.7	4.8	1.1	5.8	
7/1	483	483	-	-	-	0.8	0.0	-	0.8	5.8	5.4	0.0	5.4	
7/2+7/3	458	458	-	-	-	2.3	0.0	-	2.3	18.4	3.7	0.0	3.7	
8/1+8/2	1151	1151	-	-	-	5.1	2.9	-	7.9	24.8	7.6	2.9	10.5	
8/3	556	556	-	-	-	2.4	2.8	-	5.2	33.8	7.3	2.8	10.0	
9/1	997	997	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/2	975	975	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	545	545	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/2	559	559	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	1150	1150	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

Detailed Input Data And Results

11/2	559	559	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/1	535	535	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/2	96	96	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
13/1	113	113	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
14/1	107	107	87	20	0	0.1	0.2	-	0.4	12.1	0.6	0.2	0.9	
C1 - M1/J22 A50/A511 Controller 1 Stream: 1 PRC for Signalled Lanes (%) 4.5 Total Delay for Signalled Lanes (pcuHr): 12.48 Cycle Time (s): 60														
C1 - M1/J22 A50/A511 Controller 1 Stream: 2 PRC for Signalled Lanes (%) 9.1 Total Delay for Signalled Lanes (pcuHr): 12.23 Cycle Time (s): 60														
C2 - M1/J22 A50/A511 Controller 2 Stream: 1 PRC for Signalled Lanes (%) 3.7 Total Delay for Signalled Lanes (pcuHr): 13.72 Cycle Time (s): 51														
C2 - M1/J22 A50/A511 Controller 2 Stream: 2 PRC for Signalled Lanes (%) 3.2 Total Delay for Signalled Lanes (pcuHr): 16.26 Cycle Time (s): 51														
PRC Over All Lanes (%) 3.2 Total Delay Over All Lanes(pcuHr): 55.04														

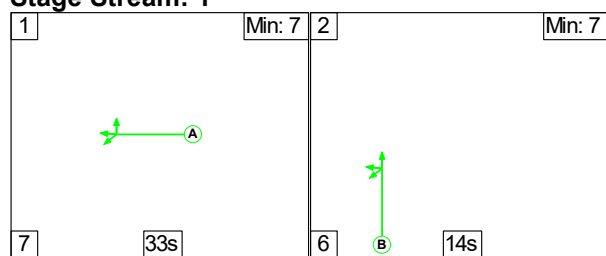
Detailed Input Data And Results

Scenario 3: '2028 Future Base AM Peak' (FG3: '2028 Future Base AM Peak', Plan 1: 'Network Control Plan 1')

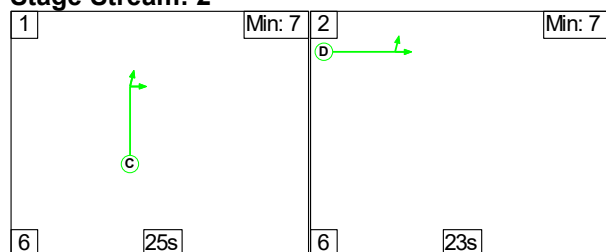
Controller :C1 - M1/J22 A50/A511 Controller 1

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

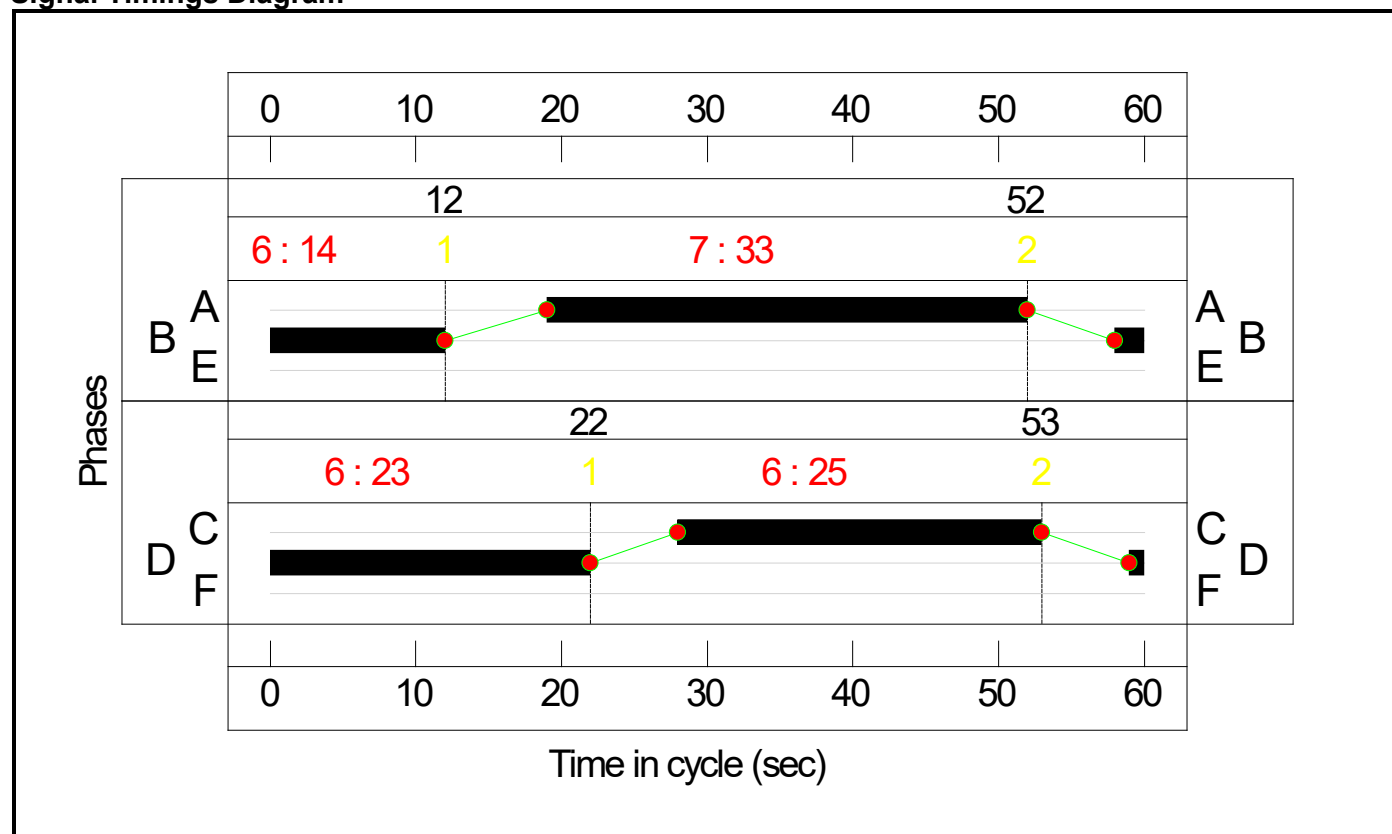
Stage	1	2
Duration	33	14
Change Point	12	52

Stage Stream: 2

Stage	1	2
Duration	25	23
Change Point	22	53

Phase Timings

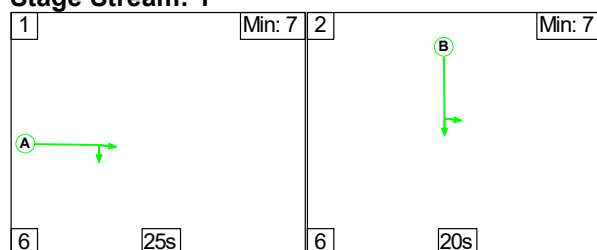
Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Sth Right Ahead Ahead2	Traffic	1	33	19	52
B	M1 N/B Off-slip Ahead Left Left2	Traffic	1	14	58	12
C	Circ W Right Ahead	Traffic	2	25	28	53
D	A511 E/B Ahead Left	Traffic	2	23	59	22
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

Signal Timings Diagram

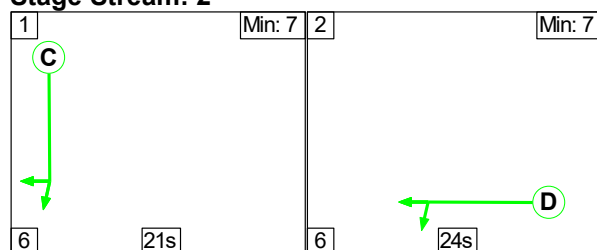
Controller :C2 - M1/J22 A50/A511 Controller 2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2

**Stage Timings**

Stage Stream: 1

Stage	1	2
Duration	25	20
Change Point	20	51

Detailed Input Data And Results

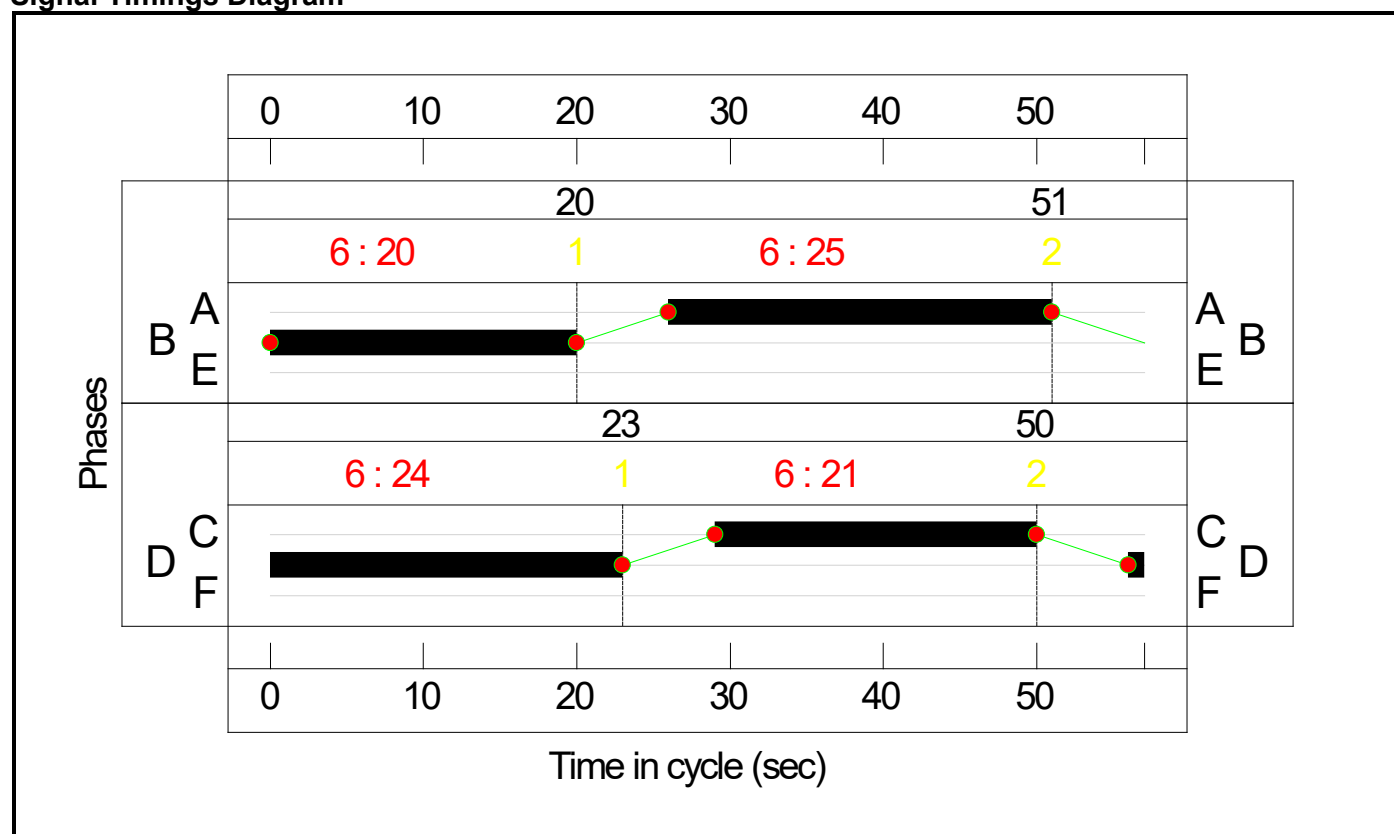
Stage Stream: 2

Stage	1	2
Duration	21	24
Change Point	23	50

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Nth Right Ahead	Traffic	1	25	26	51
B	M1 S/B Off Slip Ahead Left	Traffic	1	20	0	20
C	Circ E Right Ahead	Traffic	2	21	29	50
D	A50 W/B Ahead Left	Traffic	2	24	56	23
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

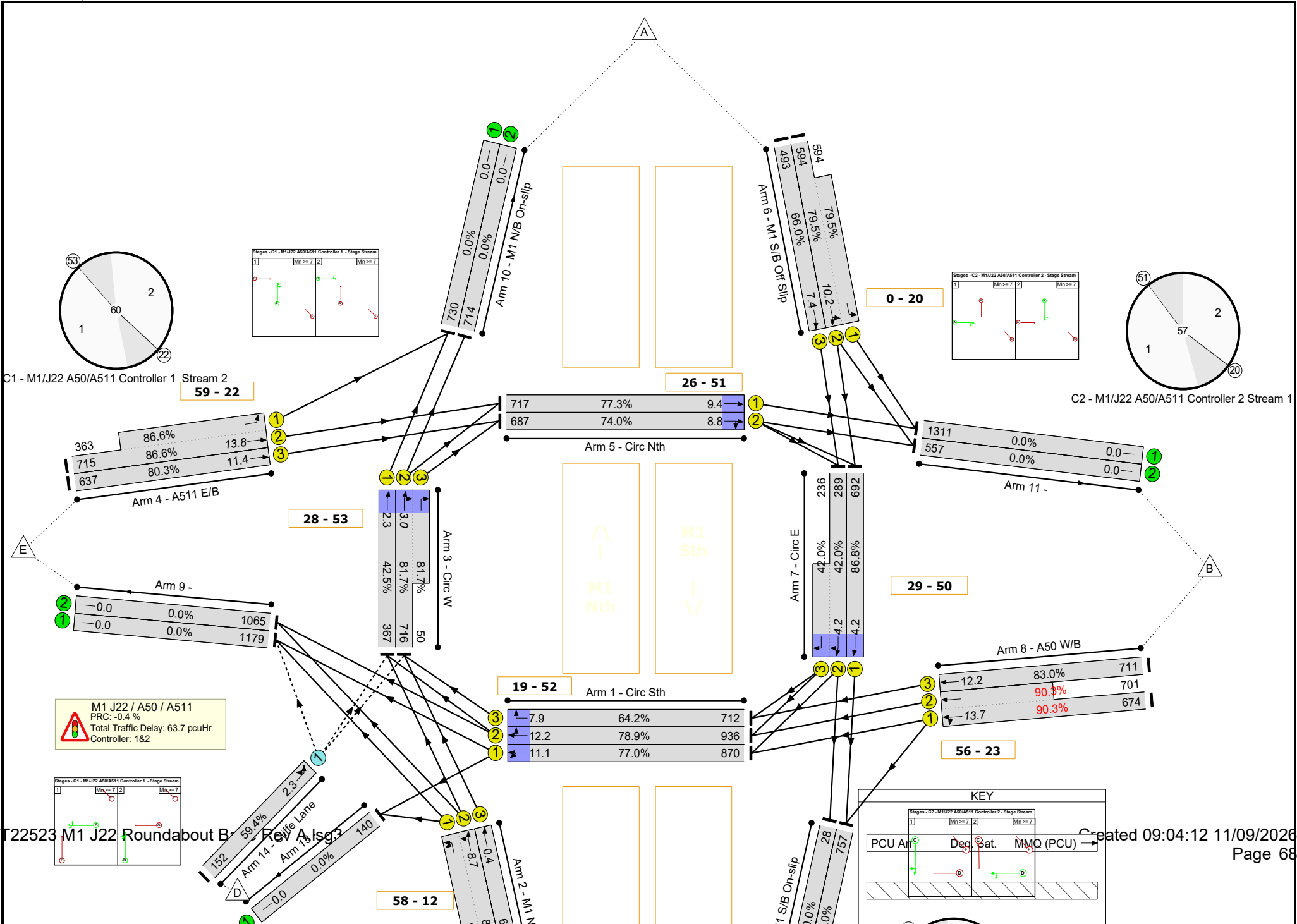
Signal Timings Diagram



Lane Green Times

Junction: M1 J22 / A50 / A511					
Lane	Description	Type	Phases	Start Green	End Green
1/1	Circ Sth Ahead Ahead2	U	A	19	52
1/2	Circ Sth Right Ahead	U	A	19	52
1/3	Circ Sth Right	U	A	19	52
2/1	M1 N/B Off-slip Left Left2	U	B	58	12
2/2	M1 N/B Off-slip Ahead Left	U	B	58	12
2/3	M1 N/B Off-slip Ahead	U	B	58	12
3/1	Circ W Ahead	U	C	28	53
3/2	Circ W Right Ahead	U	C	28	53
3/3	Circ W Right	U	C	28	53
4/1	A511 E/B Left	U	D	59	22
4/2	A511 E/B Ahead	U	D	59	22
4/3	A511 E/B Ahead	U	D	59	22
5/1	Circ Nth Ahead	U	A	26	51
5/2	Circ Nth Right Ahead	U	A	26	51
6/1	M1 S/B Off Slip Left	U	B	0	20
6/2	M1 S/B Off Slip Ahead Left	U	B	0	20
6/3	M1 S/B Off Slip Ahead	U	B	0	20
7/1	Circ E Ahead	U	C	29	50
7/2	Circ E Right Ahead	U	C	29	50
7/3	Circ E Right	U	C	29	50
8/1	A50 W/B Ahead Left	U	D	56	23
8/2	A50 W/B Ahead	U	D	56	23
8/3	A50 W/B Ahead	U	D	56	23

Detailed Input Data And Results



Detailed Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Bonus Green	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	-	90.3%
M1 J22 / A50 / A511	-	-	N/A	-	-		-	-	-	-	-	-	-	90.3%
1/1	Circ Sth Ahead Ahead2	U	1:1	N/A	C1:A		1	33	-	-	870	1995	1131	77.0%
1/2	Circ Sth Right Ahead	U	1:1	N/A	C1:A		1	33	-	-	936	2093	1186	78.9%
1/3	Circ Sth Right	U	1:1	N/A	C1:A		1	33	-	-	712	1956	1108	64.2%
2/2+2/1	M1 N/B Off-slip Ahead Left Left2	U	1:1	N/A	C1:B		1	14	-	-	817	1966:1977	492+494	82.8 : 83.0%
2/3	M1 N/B Off-slip Ahead	U	1:1	N/A	C1:B		1	14	-	-	30	1978	494	6.1%
3/1	Circ W Ahead	U	1:2	N/A	C1:C		1	25	-	-	367	1995	865	42.5%
3/2+3/3	Circ W Right Ahead	U	1:2	N/A	C1:C		1	25	-	-	766	2132:1995	877+61	81.7 : 81.7%
4/2+4/1	A511 E/B Ahead Left	U	1:2	N/A	C1:D		1	23	-	-	1078	2120:1966	826+419	86.6 : 86.6%
4/3	A511 E/B Ahead	U	1:2	N/A	C1:D		1	23	-	-	637	1983	793	80.3%
5/1	Circ Nth Ahead	U	2:1	N/A	C2:A		1	25	-	-	717	2034	928	77.3%
5/2	Circ Nth Right Ahead	U	2:1	N/A	C2:A		1	25	-	-	687	2034	928	74.0%
6/2+6/1	M1 S/B Off Slip Ahead Left	U	2:1	N/A	C2:B		1	20	-	-	1188	2027:2027	747+747	79.5 : 79.5%
6/3	M1 S/B Off Slip Ahead	U	2:1	N/A	C2:B		1	20	-	-	493	2027	747	66.0%
7/1	Circ E Ahead	U	2:2	N/A	C2:C		1	21	-	-	692	2065	797	86.8%
7/2+7/3	Circ E Right Ahead	U	2:2	N/A	C2:C		1	21	-	-	525	2166:2025	688+562	42.0 : 42.0%

Detailed Input Data And Results

8/1+8/2	A50 W/B Ahead Left	U	2:2	N/A	C2:D		1	24	-	-	1375	1953:2090	746+776	90.3 : 90.3%
8/3	A50 W/B Ahead	U	2:2	N/A	C2:D		1	24	-	-	711	1953	857	83.0%
9/1		U	N/A	N/A	-		-	-	-	-	1179	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	-	1065	Inf	Inf	0.0%
10/1	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	730	Inf	Inf	0.0%
10/2	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	714	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	-	1311	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	-	557	Inf	Inf	0.0%
12/1	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	757	Inf	Inf	0.0%
12/2	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	28	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	-	140	Inf	Inf	0.0%
14/1	Cliffe Lane Left Left2	O	N/A	N/A	-		-	-	-	-	152	2005	256	59.4%

Detailed Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
Network	-	-	72	80	0	45.9	17.9	0.0	63.7	-	-	-	-	
M1 J22 / A50 / A511	-	-	72	80	0	45.9	17.9	0.0	63.7	-	-	-	-	
1/1	870	870	-	-	-	2.4	0.0	-	2.4	10.0	11.1	0.0	11.1	
1/2	936	936	-	-	-	2.6	0.0	-	2.6	10.2	12.2	0.0	12.2	
1/3	712	712	-	-	-	1.8	0.0	-	1.8	8.9	7.9	0.0	7.9	
2/2+2/1	817	817	-	-	-	4.8	2.4	-	7.2	31.7	6.4	2.4	8.7	
2/3	30	30	-	-	-	0.1	0.0	-	0.2	21.1	0.4	0.0	0.4	
3/1	367	367	-	-	-	0.9	0.0	-	0.9	9.0	2.3	0.0	2.3	
3/2+3/3	766	766	-	-	-	1.4	0.0	-	1.4	6.8	3.0	0.0	3.0	
4/2+4/1	1078	1078	-	-	-	4.6	3.1	-	7.7	25.7	10.7	3.1	13.8	
4/3	637	637	-	-	-	2.8	2.0	-	4.8	27.1	9.4	2.0	11.4	
5/1	717	717	-	-	-	2.6	0.0	-	2.6	13.0	9.4	0.0	9.4	
5/2	687	687	-	-	-	2.4	0.0	-	2.4	12.7	8.8	0.0	8.8	
6/2+6/1	1188	1188	-	-	-	5.3	1.9	-	7.2	21.9	8.2	1.9	10.2	
6/3	493	493	-	-	-	2.1	1.0	-	3.0	22.1	6.4	1.0	7.4	
7/1	692	692	-	-	-	1.4	0.0	-	1.4	7.4	4.2	0.0	4.2	
7/2+7/3	525	525	-	-	-	2.1	0.0	-	2.1	14.3	4.2	0.0	4.2	
8/1+8/2	1375	1375	-	-	-	5.2	4.4	-	9.6	25.1	9.3	4.4	13.7	
8/3	711	711	-	-	-	2.8	2.4	-	5.2	26.1	9.9	2.4	12.2	
9/1	1179	1179	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/2	1065	1065	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	730	730	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/2	714	714	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	1311	1311	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

Detailed Input Data And Results

11/2	557	557	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/1	757	757	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/2	28	28	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
13/1	140	140	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
14/1	152	152	72	80	0	0.4	0.7	-	1.2	27.3	1.6	0.7	2.3	
C1 - M1/J22 A50/A511 Controller 1 Stream: 1 PRC for Signalled Lanes (%) 8.5 C1 - M1/J22 A50/A511 Controller 1 Stream: 2 PRC for Signalled Lanes (%) 3.9 C2 - M1/J22 A50/A511 Controller 2 Stream: 1 PRC for Signalled Lanes (%) 13.1 C2 - M1/J22 A50/A511 Controller 2 Stream: 2 PRC for Signalled Lanes (%) -0.4 PRC Over All Lanes (%) -0.4 Total Delay for Signalled Lanes (pcuHr) 14.18 Total Delay for Signalled Lanes (pcuHr) 14.85 Total Delay for Signalled Lanes (pcuHr) 15.27 Total Delay for Signalled Lanes (pcuHr) 18.28 Total Delay Over All Lanes(pcuHr) 63.74 Cycle Time (s) 60 Cycle Time (s) 60 Cycle Time (s) 57 Cycle Time (s) 57														

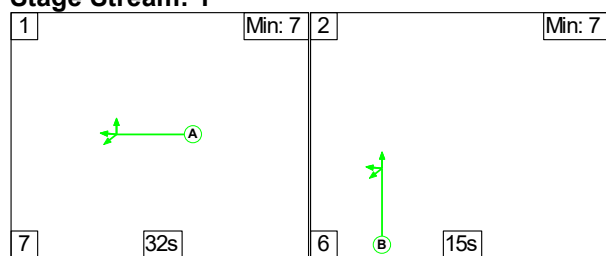
Detailed Input Data And Results

Scenario 4: '2028 Future Base PM Peak' (FG4: '2028 Future Base PM Peak', Plan 1: 'Network Control Plan 1')

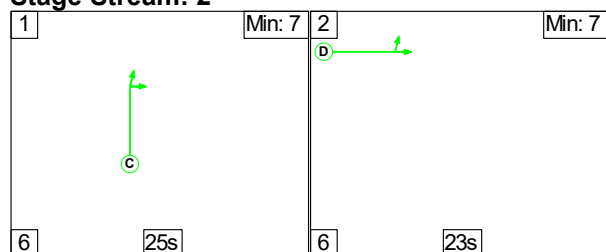
Controller :C1 - M1/J22 A50/A511 Controller 1

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	32	15
Change Point	59	38

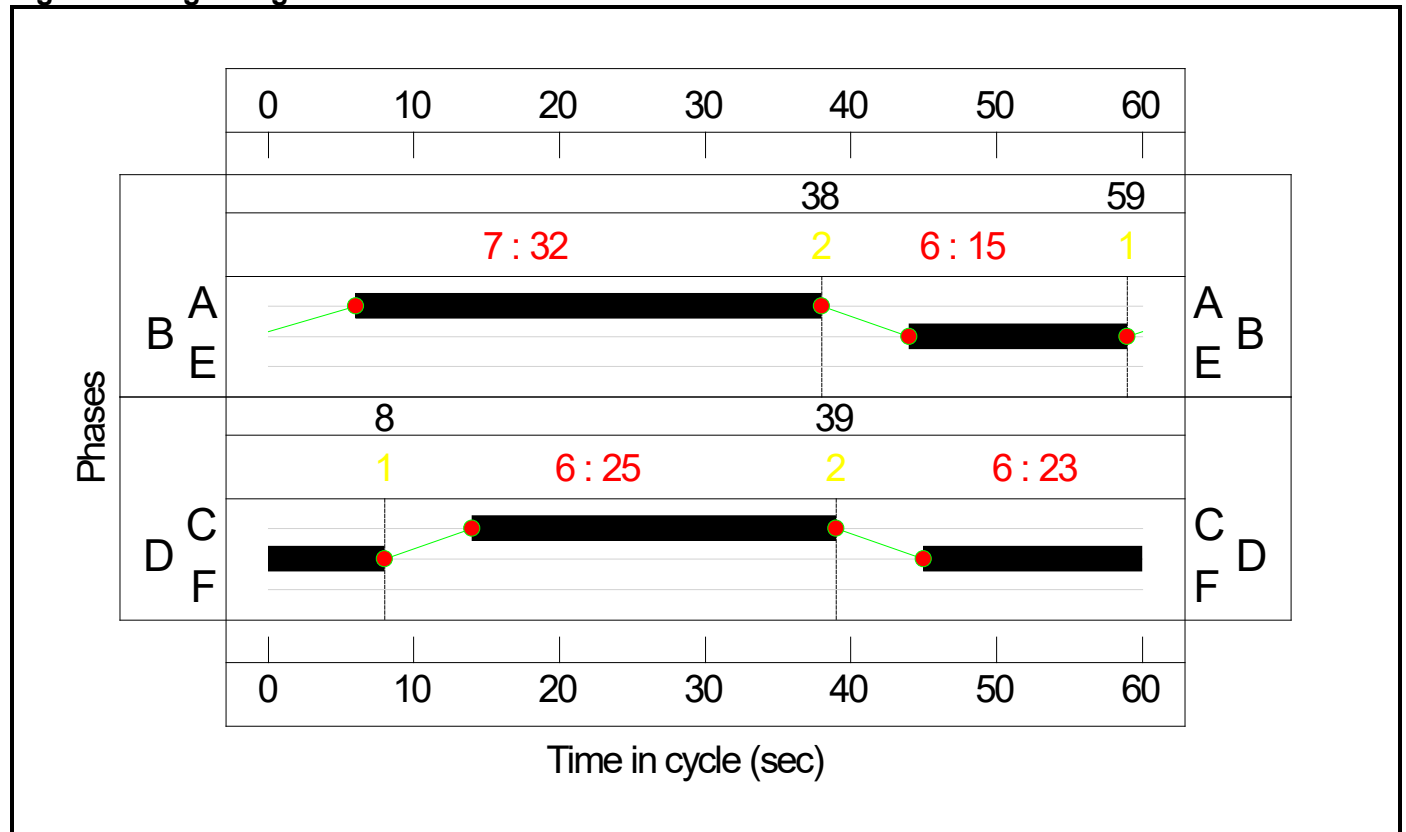
Stage Stream: 2

Stage	1	2
Duration	25	23
Change Point	8	39

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Sth Right Ahead Ahead2	Traffic	1	32	6	38
B	M1 N/B Off-slip Ahead Left Left2	Traffic	1	15	44	59
C	Circ W Right Ahead	Traffic	2	25	14	39
D	A511 E/B Ahead Left	Traffic	2	23	45	8
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

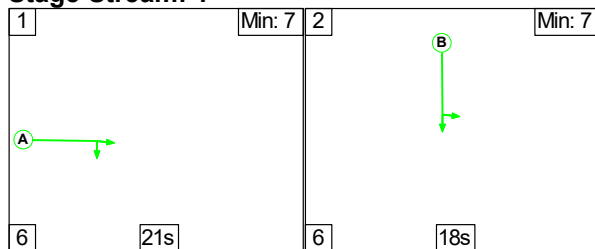
Signal Timings Diagram



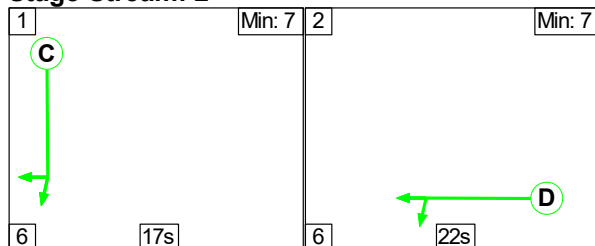
Controller :C2 - M1/J22 A50/A511 Controller 2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	21	18
Change Point	47	23

Detailed Input Data And Results

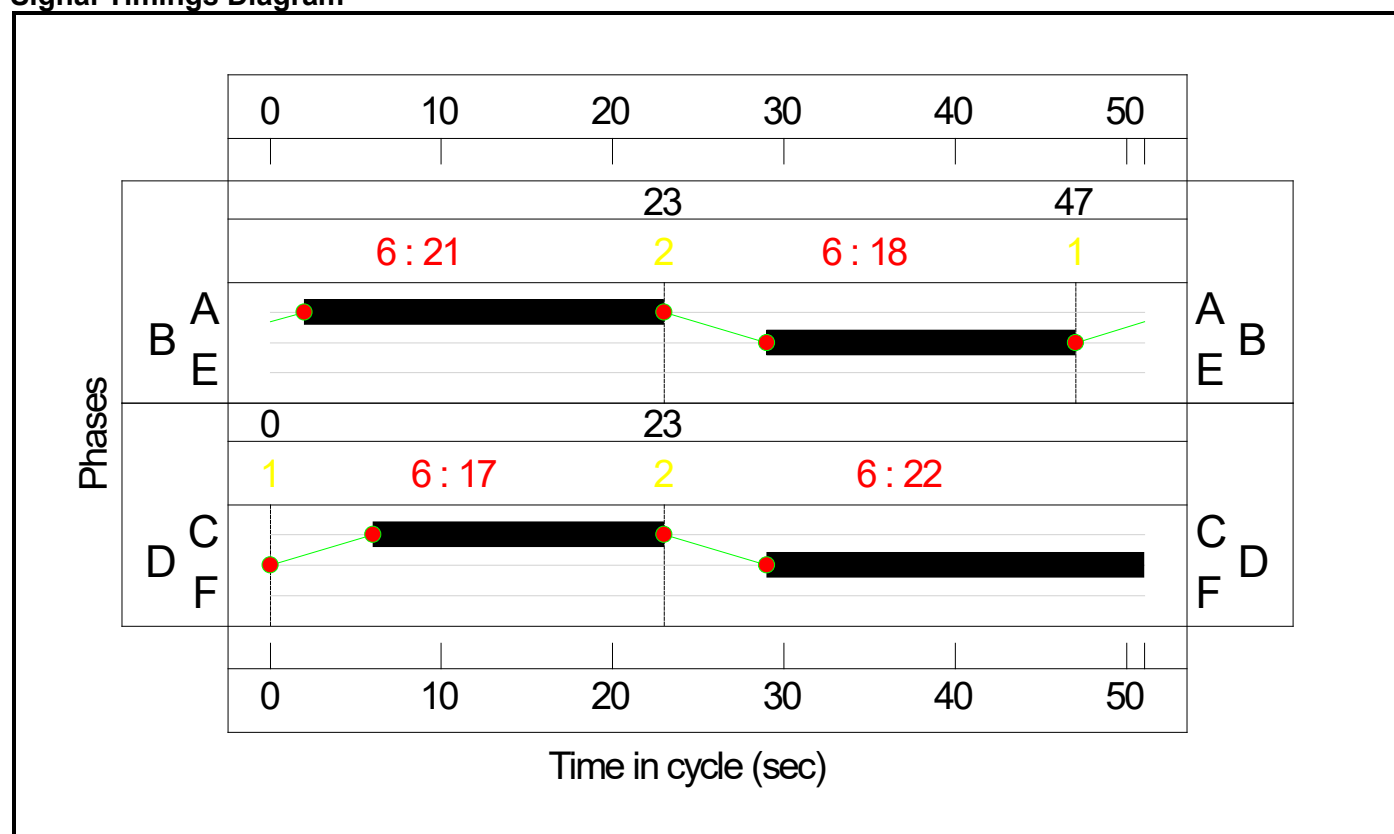
Stage Stream: 2

Stage	1	2
Duration	17	22
Change Point	0	23

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Nth Right Ahead	Traffic	1	21	2	23
B	M1 S/B Off Slip Ahead Left	Traffic	1	18	29	47
C	Circ E Right Ahead	Traffic	2	17	6	23
D	A50 W/B Ahead Left	Traffic	2	22	29	0
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

Signal Timings Diagram



Lane Green Times

Junction: M1 J22 / A50 / A511					
Lane	Description	Type	Phases	Start Green	End Green
1/1	Circ Sth Ahead Ahead2	U	A	6	38
1/2	Circ Sth Right Ahead	U	A	6	38
1/3	Circ Sth Right	U	A	6	38
2/1	M1 N/B Off-slip Left Left2	U	B	44	59
2/2	M1 N/B Off-slip Ahead Left	U	B	44	59
2/3	M1 N/B Off-slip Ahead	U	B	44	59
3/1	Circ W Ahead	U	C	14	39
3/2	Circ W Right Ahead	U	C	14	39
3/3	Circ W Right	U	C	14	39
4/1	A511 E/B Left	U	D	45	8
4/2	A511 E/B Ahead	U	D	45	8
4/3	A511 E/B Ahead	U	D	45	8
5/1	Circ Nth Ahead	U	A	2	23
5/2	Circ Nth Right Ahead	U	A	2	23
6/1	M1 S/B Off Slip Left	U	B	29	47
6/2	M1 S/B Off Slip Ahead Left	U	B	29	47
6/3	M1 S/B Off Slip Ahead	U	B	29	47
7/1	Circ E Ahead	U	C	6	23
7/2	Circ E Right Ahead	U	C	6	23
7/3	Circ E Right	U	C	6	23
8/1	A50 W/B Ahead Left	U	D	29	0
8/2	A50 W/B Ahead	U	D	29	0
8/3	A50 W/B Ahead	U	D	29	0

T22523 M1 J22 Roundabout B - Rev A Iss 3

M1 J22 / A50 / A511
 PRC: 7.3 %
 Total Traffic Delay: 51.4 pcuHr
 Controller: 1&2

KEY
 Stages - C2 - M1/J22 A50/A511 Controller 2 - Stage Stream
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975

Detailed Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Bonus Green	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	-	83.8%
M1 J22 / A50 / A511	-	-	N/A	-	-		-	-	-	-	-	-	-	83.8%
1/1	Circ Sth Ahead Ahead2	U	1:1	N/A	C1:A		1	32	-	-	858	1995	1097	78.2%
1/2	Circ Sth Right Ahead	U	1:1	N/A	C1:A		1	32	-	-	929	2093	1151	80.7%
1/3	Circ Sth Right	U	1:1	N/A	C1:A		1	32	-	-	616	1956	1076	57.3%
2/2+2/1	M1 N/B Off-slip Ahead Left Left2	U	1:1	N/A	C1:B		1	15	-	-	881	1966:1977	524+527	83.7 : 83.8%
2/3	M1 N/B Off-slip Ahead	U	1:1	N/A	C1:B		1	15	-	-	28	1978	527	5.3%
3/1	Circ W Ahead	U	1:2	N/A	C1:C		1	25	-	-	195	1995	865	22.6%
3/2+3/3	Circ W Right Ahead	U	1:2	N/A	C1:C		1	25	-	-	666	2132:1995	873+69	70.7 : 70.7%
4/2+4/1	A511 E/B Ahead Left	U	1:2	N/A	C1:D		1	23	-	-	1021	2120:1966	824+455	79.8 : 79.8%
4/3	A511 E/B Ahead	U	1:2	N/A	C1:D		1	23	-	-	561	1983	793	70.7%
5/1	Circ Nth Ahead	U	2:1	N/A	C2:A		1	21	-	-	661	2034	877	75.3%
5/2	Circ Nth Right Ahead	U	2:1	N/A	C2:A		1	21	-	-	610	2034	877	69.5%
6/2+6/1	M1 S/B Off Slip Ahead Left	U	2:1	N/A	C2:B		1	18	-	-	1007	2027:2027	755+755	66.7 : 66.6%
6/3	M1 S/B Off Slip Ahead	U	2:1	N/A	C2:B		1	18	-	-	523	2027	755	69.3%
7/1	Circ E Ahead	U	2:2	N/A	C2:C		1	17	-	-	468	2065	729	64.2%
7/2+7/3	Circ E Right Ahead	U	2:2	N/A	C2:C		1	17	-	-	681	2177:2025	688+471	58.8 : 58.8%

Detailed Input Data And Results

8/1+8/2	A50 W/B Ahead Left	U	2:2	N/A	C2:D		1	22	-	-	1297	1953:2090	804+815	80.1 : 80.1%
8/3	A50 W/B Ahead	U	2:2	N/A	C2:D		1	22	-	-	615	1953	881	69.8%
9/1		U	N/A	N/A	-		-	-	-	-	1239	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	-	1259	Inf	Inf	0.0%
10/1	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	558	Inf	Inf	0.0%
10/2	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	614	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	-	1164	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	-	488	Inf	Inf	0.0%
12/1	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	511	Inf	Inf	0.0%
12/2	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	147	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	-	80	Inf	Inf	0.0%
14/1	Cliffe Lane Left Left2	O	N/A	N/A	-		-	-	-	-	127	2005	257	49.5%

Detailed Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
Network	-	-	72	55	0	40.0	11.4	0.0	51.4	-	-	-	-	
M1 J22 / A50 / A511	-	-	72	55	0	40.0	11.4	0.0	51.4	-	-	-	-	
1/1	858	858	-	-	-	2.5	0.0	-	2.5	10.7	11.2	0.0	11.2	
1/2	929	929	-	-	-	2.8	0.0	-	2.8	10.9	12.4	0.0	12.4	
1/3	616	616	-	-	-	1.5	0.0	-	1.5	8.9	6.7	0.0	6.7	
2/2+2/1	881	881	-	-	-	5.1	2.5	-	7.6	31.0	6.9	2.5	9.4	
2/3	28	28	-	-	-	0.1	0.0	-	0.2	20.1	0.3	0.0	0.4	
3/1	195	195	-	-	-	0.6	0.0	-	0.6	11.5	1.7	0.0	1.7	
3/2+3/3	666	666	-	-	-	1.3	0.0	-	1.3	6.8	2.1	0.0	2.1	
4/2+4/1	1021	1021	-	-	-	4.2	1.9	-	6.1	21.7	9.5	1.9	11.5	
4/3	561	561	-	-	-	2.3	1.2	-	3.5	22.7	7.8	1.2	9.0	
5/1	661	661	-	-	-	2.2	0.0	-	2.2	12.2	7.7	0.0	7.7	
5/2	610	610	-	-	-	2.0	0.0	-	2.0	11.8	6.9	0.0	6.9	
6/2+6/1	1007	1007	-	-	-	3.7	1.0	-	4.7	16.9	5.9	1.0	6.9	
6/3	523	523	-	-	-	2.0	1.1	-	3.1	21.2	6.2	1.1	7.4	
7/1	468	468	-	-	-	0.9	0.0	-	0.9	7.0	2.3	0.0	2.3	
7/2+7/3	681	681	-	-	-	2.3	0.0	-	2.3	12.3	4.1	0.0	4.1	
8/1+8/2	1297	1297	-	-	-	4.1	2.0	-	6.1	16.8	7.3	2.0	9.3	
8/3	615	615	-	-	-	1.9	1.1	-	3.1	17.9	6.8	1.1	8.0	
9/1	1239	1239	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/2	1259	1259	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	558	558	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/2	614	614	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	1164	1164	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

Detailed Input Data And Results

11/2	488	488	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/1	511	511	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/2	147	147	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
13/1	80	80	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
14/1	127	127	72	55	0	0.3	0.5	-	0.8	23.2	1.2	0.5	1.7	
C1 - M1/J22 A50/A511 Controller 1Stream: 1 PRC for Signalled Lanes (%)7.3Total Delay for Signalled Lanes (pcuHr)14.63Cycle Time (s)60 C1 - M1/J22 A50/A511 Controller 1Stream: 2 PRC for Signalled Lanes (%)12.7Total Delay for Signalled Lanes (pcuHr)11.57Cycle Time (s)60 C2 - M1/J22 A50/A511 Controller 2Stream: 1 PRC for Signalled Lanes (%)19.5Total Delay for Signalled Lanes (pcuHr)12.06Cycle Time (s)51 C2 - M1/J22 A50/A511 Controller 2Stream: 2 PRC for Signalled Lanes (%)12.4Total Delay for Signalled Lanes (pcuHr)12.37Cycle Time (s)51 PRC Over All Lanes (%)7.3Total Delay Over All Lanes(pcuHr)51.45														

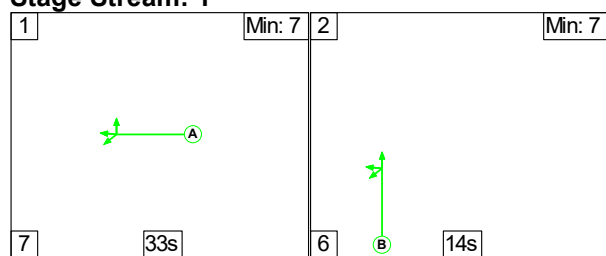
Detailed Input Data And Results

Scenario 5: '2030 Future Base AM Peak' (FG5: '2030 Future Base AM Peak', Plan 1: 'Network Control Plan 1')

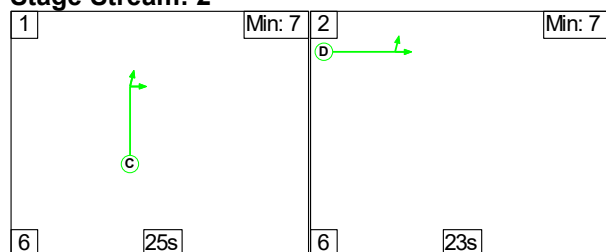
Controller :C1 - M1/J22 A50/A511 Controller 1

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

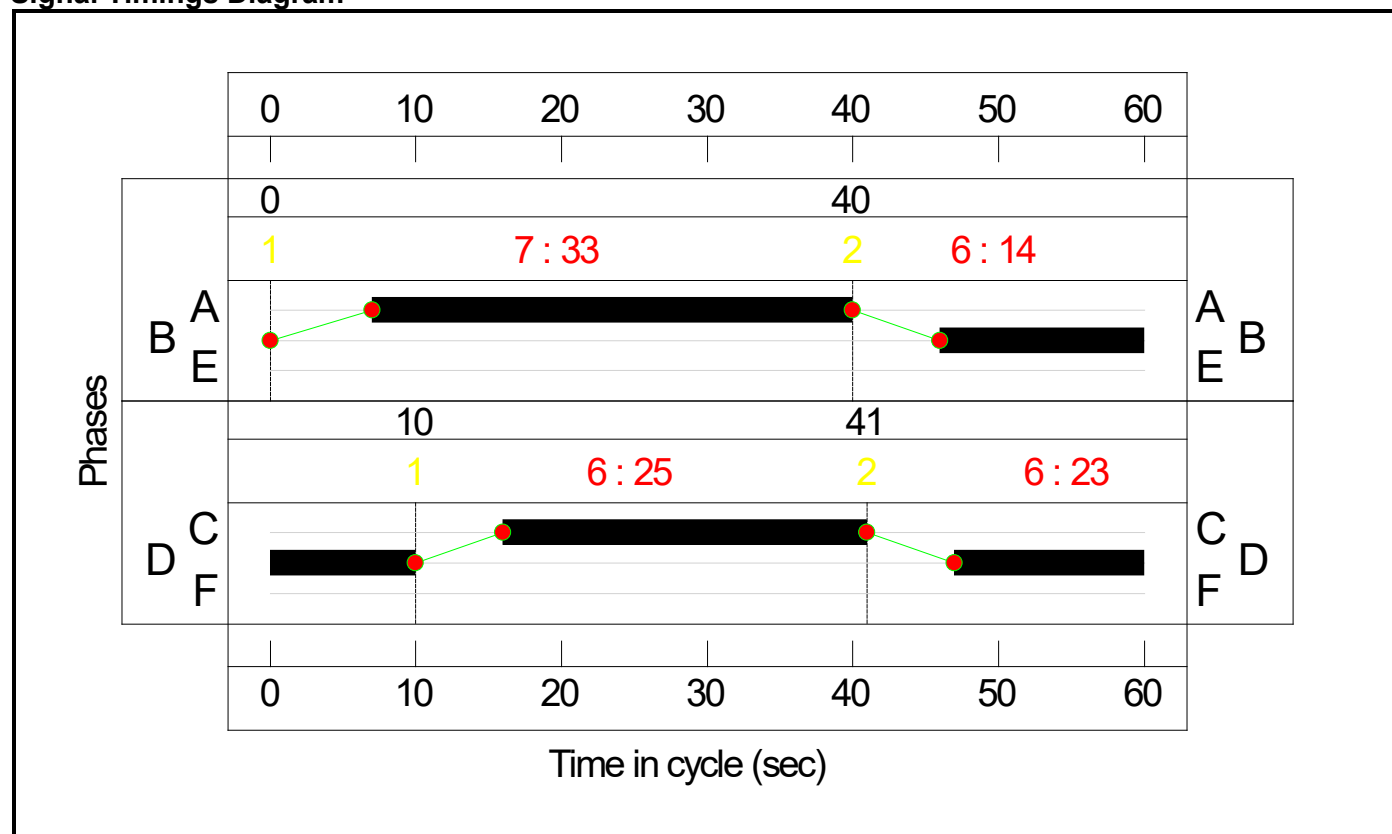
Stage	1	2
Duration	33	14
Change Point	0	40

Stage Stream: 2

Stage	1	2
Duration	25	23
Change Point	10	41

Phase Timings

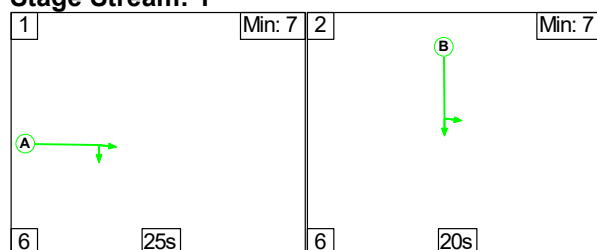
Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Sth Right Ahead Ahead2	Traffic	1	33	7	40
B	M1 N/B Off-slip Ahead Left Left2	Traffic	1	14	46	0
C	Circ W Right Ahead	Traffic	2	25	16	41
D	A511 E/B Ahead Left	Traffic	2	23	47	10
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

Signal Timings Diagram

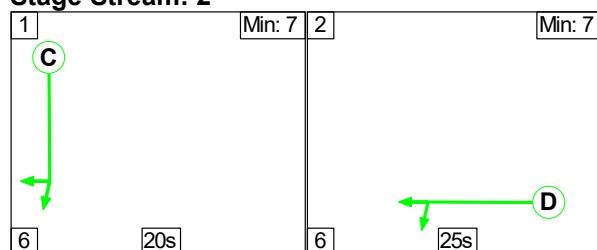
Controller : C2 - M1/J22 A50/A511 Controller 2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2

**Stage Timings**

Stage Stream: 1

Stage	1	2
Duration	25	20
Change Point	34	8

Detailed Input Data And Results

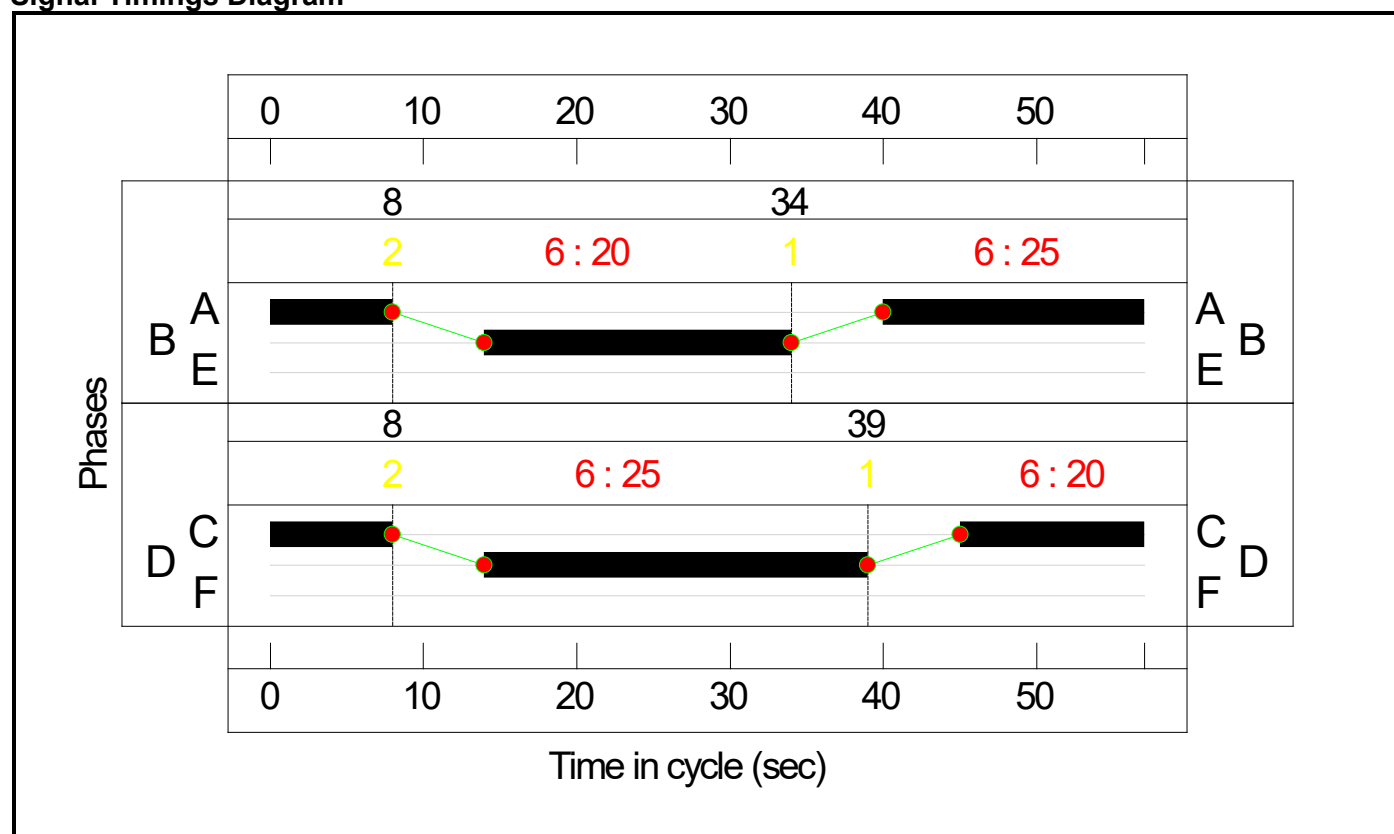
Stage Stream: 2

Stage	1	2
Duration	20	25
Change Point	39	8

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Nth Right Ahead	Traffic	1	25	40	8
B	M1 S/B Off Slip Ahead Left	Traffic	1	20	14	34
C	Circ E Right Ahead	Traffic	2	20	45	8
D	A50 W/B Ahead Left	Traffic	2	25	14	39
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

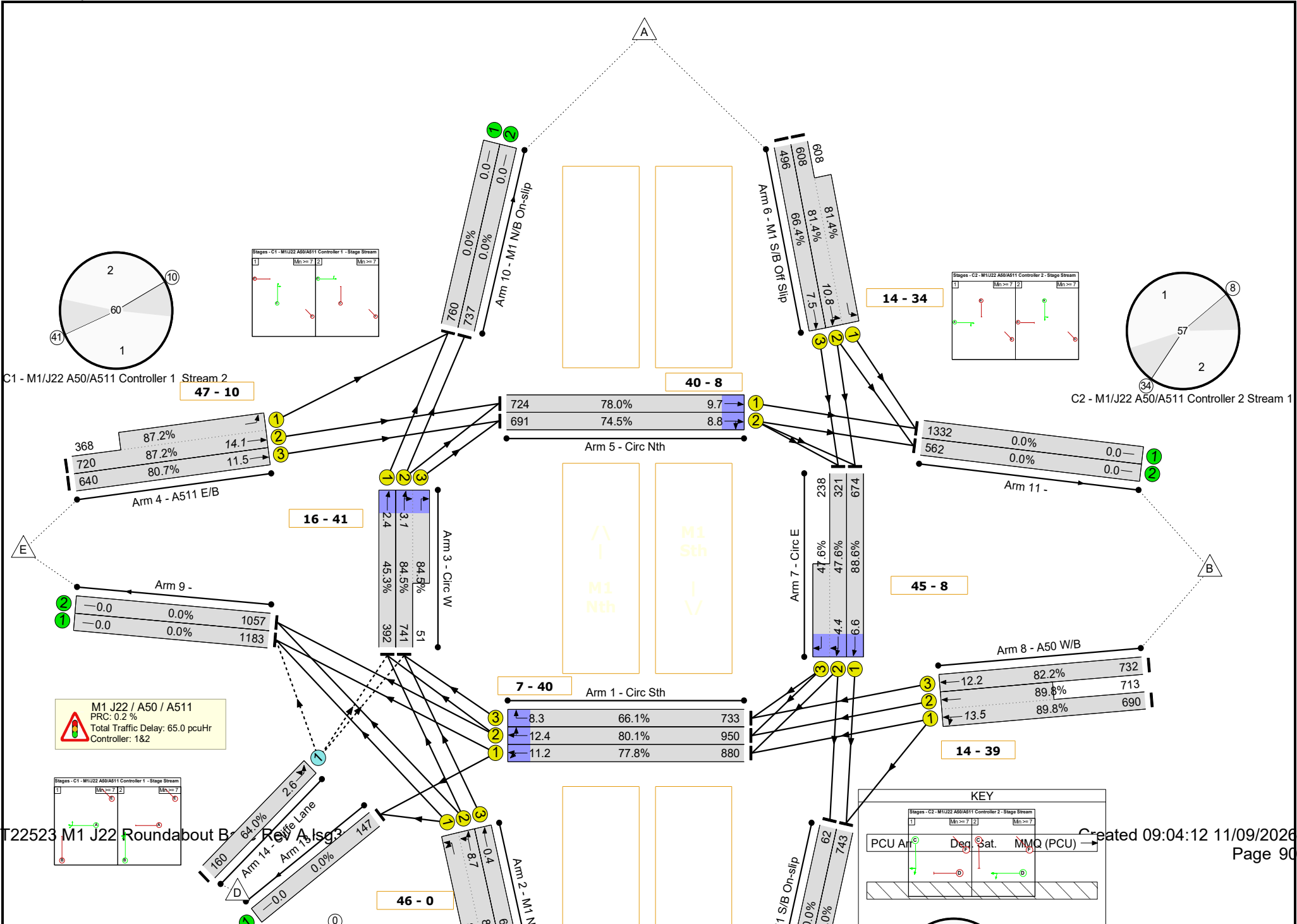
Signal Timings Diagram



Lane Green Times

Junction: M1 J22 / A50 / A511					
Lane	Description	Type	Phases	Start Green	End Green
1/1	Circ Sth Ahead Ahead2	U	A	7	40
1/2	Circ Sth Right Ahead	U	A	7	40
1/3	Circ Sth Right	U	A	7	40
2/1	M1 N/B Off-slip Left Left2	U	B	46	0
2/2	M1 N/B Off-slip Ahead Left	U	B	46	0
2/3	M1 N/B Off-slip Ahead	U	B	46	0
3/1	Circ W Ahead	U	C	16	41
3/2	Circ W Right Ahead	U	C	16	41
3/3	Circ W Right	U	C	16	41
4/1	A511 E/B Left	U	D	47	10
4/2	A511 E/B Ahead	U	D	47	10
4/3	A511 E/B Ahead	U	D	47	10
5/1	Circ Nth Ahead	U	A	40	8
5/2	Circ Nth Right Ahead	U	A	40	8
6/1	M1 S/B Off Slip Left	U	B	14	34
6/2	M1 S/B Off Slip Ahead Left	U	B	14	34
6/3	M1 S/B Off Slip Ahead	U	B	14	34
7/1	Circ E Ahead	U	C	45	8
7/2	Circ E Right Ahead	U	C	45	8
7/3	Circ E Right	U	C	45	8
8/1	A50 W/B Ahead Left	U	D	14	39
8/2	A50 W/B Ahead	U	D	14	39
8/3	A50 W/B Ahead	U	D	14	39

Detailed Input Data And Results



Detailed Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Bonus Green	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	-	89.8%
M1 J22 / A50 / A511	-	-	N/A	-	-		-	-	-	-	-	-	-	89.8%
1/1	Circ Sth Ahead Ahead2	U	1:1	N/A	C1:A		1	33	-	-	880	1995	1131	77.8%
1/2	Circ Sth Right Ahead	U	1:1	N/A	C1:A		1	33	-	-	950	2093	1186	80.1%
1/3	Circ Sth Right	U	1:1	N/A	C1:A		1	33	-	-	733	1956	1108	66.1%
2/2+2/1	M1 N/B Off-slip Ahead Left Left2	U	1:1	N/A	C1:B		1	14	-	-	817	1966:1977	492+494	82.8 : 83.0%
2/3	M1 N/B Off-slip Ahead	U	1:1	N/A	C1:B		1	14	-	-	31	1978	494	6.3%
3/1	Circ W Ahead	U	1:2	N/A	C1:C		1	25	-	-	392	1995	865	45.3%
3/2+3/3	Circ W Right Ahead	U	1:2	N/A	C1:C		1	25	-	-	792	2132:1995	877+60	84.5 : 84.5%
4/2+4/1	A511 E/B Ahead Left	U	1:2	N/A	C1:D		1	23	-	-	1088	2120:1966	826+422	87.2 : 87.2%
4/3	A511 E/B Ahead	U	1:2	N/A	C1:D		1	23	-	-	640	1983	793	80.7%
5/1	Circ Nth Ahead	U	2:1	N/A	C2:A		1	25	-	-	724	2034	928	78.0%
5/2	Circ Nth Right Ahead	U	2:1	N/A	C2:A		1	25	-	-	691	2034	928	74.5%
6/2+6/1	M1 S/B Off Slip Ahead Left	U	2:1	N/A	C2:B		1	20	-	-	1216	2027:2027	747+747	81.4 : 81.4%
6/3	M1 S/B Off Slip Ahead	U	2:1	N/A	C2:B		1	20	-	-	496	2027	747	66.4%
7/1	Circ E Ahead	U	2:2	N/A	C2:C		1	20	-	-	674	2065	761	88.6%
7/2+7/3	Circ E Right Ahead	U	2:2	N/A	C2:C		1	20	-	-	559	2170:2025	675+500	47.6 : 47.6%

Detailed Input Data And Results

8/1+8/2	A50 W/B Ahead Left	U	2:2	N/A	C2:D		1	25	-	-	1403	1953:2090	768+794	89.8 : 89.8%
8/3	A50 W/B Ahead	U	2:2	N/A	C2:D		1	25	-	-	732	1953	891	82.2%
9/1		U	N/A	N/A	-		-	-	-	-	1183	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	-	1057	Inf	Inf	0.0%
10/1	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	760	Inf	Inf	0.0%
10/2	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	737	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	-	1332	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	-	562	Inf	Inf	0.0%
12/1	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	743	Inf	Inf	0.0%
12/2	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	62	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	-	147	Inf	Inf	0.0%
14/1	Cliffe Lane Left Left2	O	N/A	N/A	-		-	-	-	-	160	2005	250	64.0%

Detailed Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
Network	-	-	67	93	0	46.8	18.1	0.0	65.0	-	-	-	-	
M1 J22 / A50 / A511	-	-	67	93	0	46.8	18.1	0.0	65.0	-	-	-	-	
1/1	880	880	-	-	-	2.5	0.0	-	2.5	10.1	11.2	0.0	11.2	
1/2	950	950	-	-	-	2.7	0.0	-	2.7	10.3	12.4	0.0	12.4	
1/3	733	733	-	-	-	1.8	0.0	-	1.8	9.0	8.3	0.0	8.3	
2/2+2/1	817	817	-	-	-	4.8	2.4	-	7.2	31.7	6.4	2.4	8.7	
2/3	31	31	-	-	-	0.1	0.0	-	0.2	21.1	0.4	0.0	0.4	
3/1	392	392	-	-	-	1.0	0.0	-	1.0	9.1	2.4	0.0	2.4	
3/2+3/3	792	792	-	-	-	1.5	0.0	-	1.5	6.9	3.1	0.0	3.1	
4/2+4/1	1088	1088	-	-	-	4.6	3.3	-	7.9	26.2	10.8	3.3	14.1	
4/3	640	640	-	-	-	2.8	2.0	-	4.9	27.4	9.4	2.0	11.5	
5/1	724	724	-	-	-	2.6	0.0	-	2.6	13.1	9.7	0.0	9.7	
5/2	691	691	-	-	-	2.5	0.0	-	2.5	12.8	8.8	0.0	8.8	
6/2+6/1	1216	1216	-	-	-	5.5	2.2	-	7.6	22.6	8.6	2.2	10.8	
6/3	496	496	-	-	-	2.1	1.0	-	3.1	22.2	6.5	1.0	7.5	
7/1	674	674	-	-	-	1.5	0.0	-	1.5	8.0	6.6	0.0	6.6	
7/2+7/3	559	559	-	-	-	2.4	0.0	-	2.4	15.6	4.4	0.0	4.4	
8/1+8/2	1403	1403	-	-	-	5.0	4.2	-	9.2	23.7	9.3	4.2	13.5	
8/3	732	732	-	-	-	2.7	2.2	-	5.0	24.5	10.0	2.2	12.2	
9/1	1183	1183	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/2	1057	1057	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	760	760	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/2	737	737	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	1332	1332	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

Detailed Input Data And Results

11/2	562	562	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/1	743	743	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/2	62	62	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
13/1	147	147	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
14/1	160	160	67	93	0	0.5	0.9	-	1.4	30.4	1.7	0.9	2.6	
C1 - M1/J22 A50/A511 Controller 1 Stream: 1 PRC for Signalled Lanes (%) 8.5 Total Delay for Signalled Lanes (pcuHr): 14.39 Cycle Time (s): 60														
C1 - M1/J22 A50/A511 Controller 1 Stream: 2 PRC for Signalled Lanes (%) 3.2 Total Delay for Signalled Lanes (pcuHr): 15.28 Cycle Time (s): 60														
C2 - M1/J22 A50/A511 Controller 2 Stream: 1 PRC for Signalled Lanes (%) 10.5 Total Delay for Signalled Lanes (pcuHr): 15.78 Cycle Time (s): 57														
C2 - M1/J22 A50/A511 Controller 2 Stream: 2 PRC for Signalled Lanes (%) 0.2 Total Delay for Signalled Lanes (pcuHr): 18.14 Cycle Time (s): 57														
PRC Over All Lanes (%) 0.2 Total Delay Over All Lanes(pcuHr): 64.95														

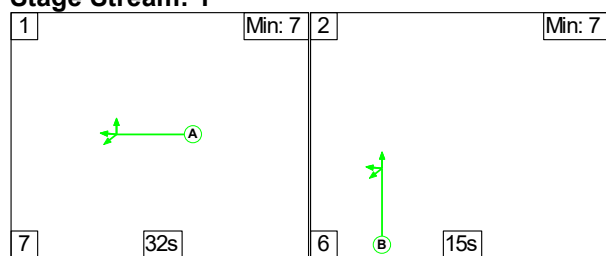
Detailed Input Data And Results

Scenario 6: '2030 Future Base PM Peak ' (FG6: '2030 Future Base PM Peak', Plan 1: 'Network Control Plan 1')

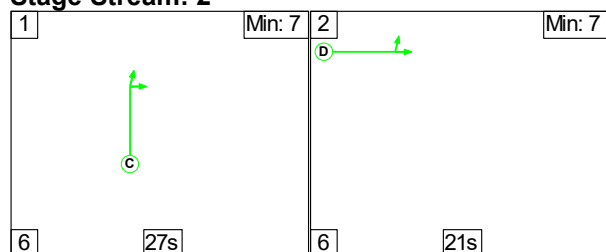
Controller :C1 - M1/J22 A50/A511 Controller 1

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

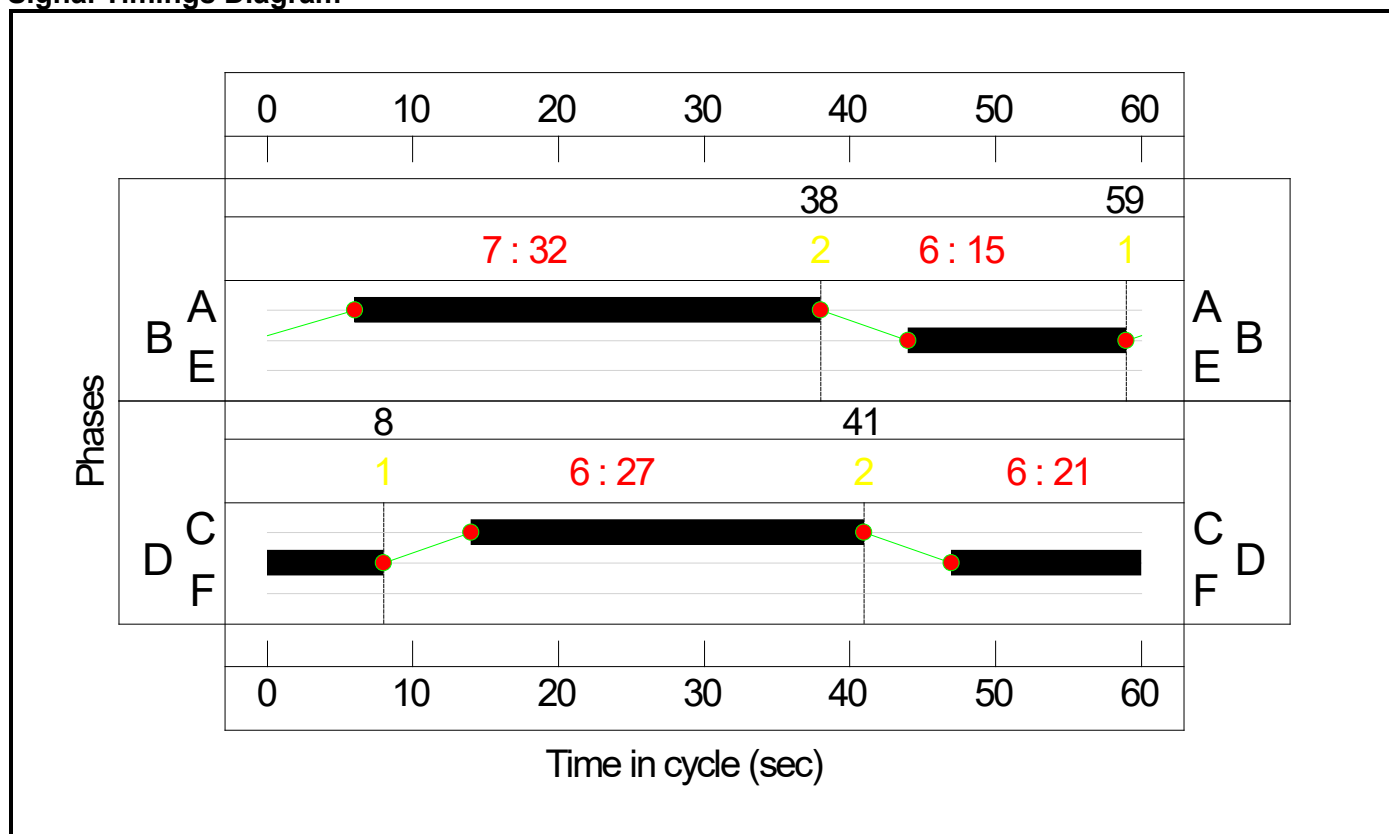
Stage	1	2
Duration	32	15
Change Point	59	38

Stage Stream: 2

Stage	1	2
Duration	27	21
Change Point	8	41

Phase Timings

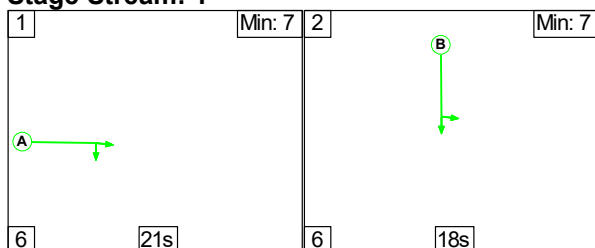
Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Sth Right Ahead Ahead2	Traffic	1	32	6	38
B	M1 N/B Off-slip Ahead Left Left2	Traffic	1	15	44	59
C	Circ W Right Ahead	Traffic	2	27	14	41
D	A511 E/B Ahead Left	Traffic	2	21	47	8
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

Signal Timings Diagram

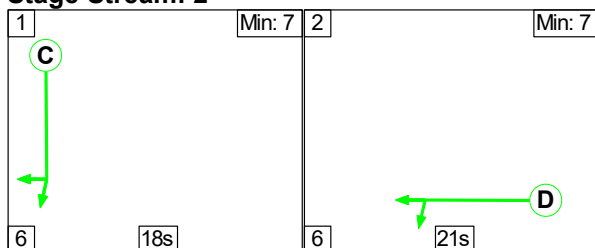
Controller :C2 - M1/J22 A50/A511 Controller 2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2

**Stage Timings**

Stage Stream: 1

Stage	1	2
Duration	21	18
Change Point	47	23

Detailed Input Data And Results

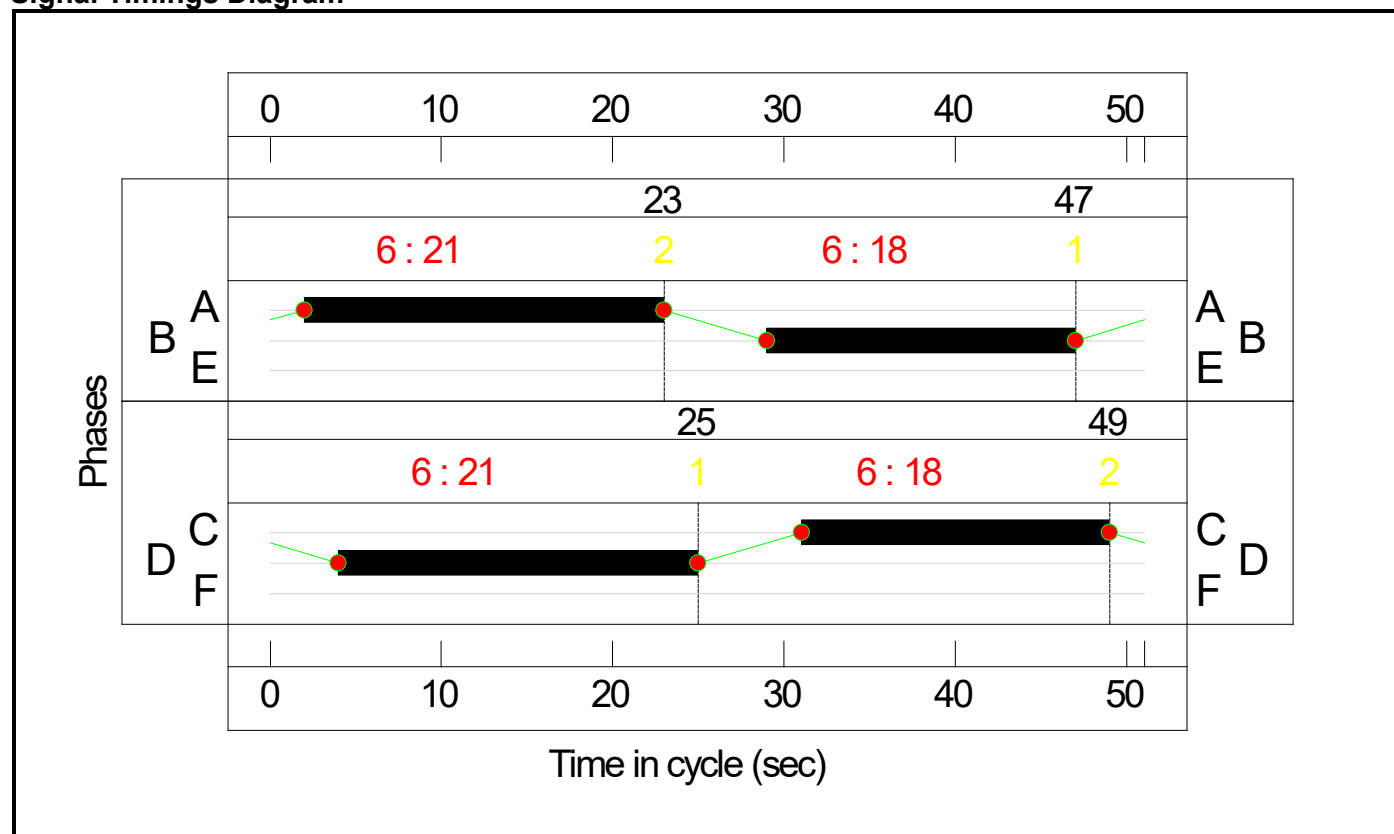
Stage Stream: 2

Stage	1	2
Duration	18	21
Change Point	25	49

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Nth Right Ahead	Traffic	1	21	2	23
B	M1 S/B Off Slip Ahead Left	Traffic	1	18	29	47
C	Circ E Right Ahead	Traffic	2	18	31	49
D	A50 W/B Ahead Left	Traffic	2	21	4	25
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

Signal Timings Diagram

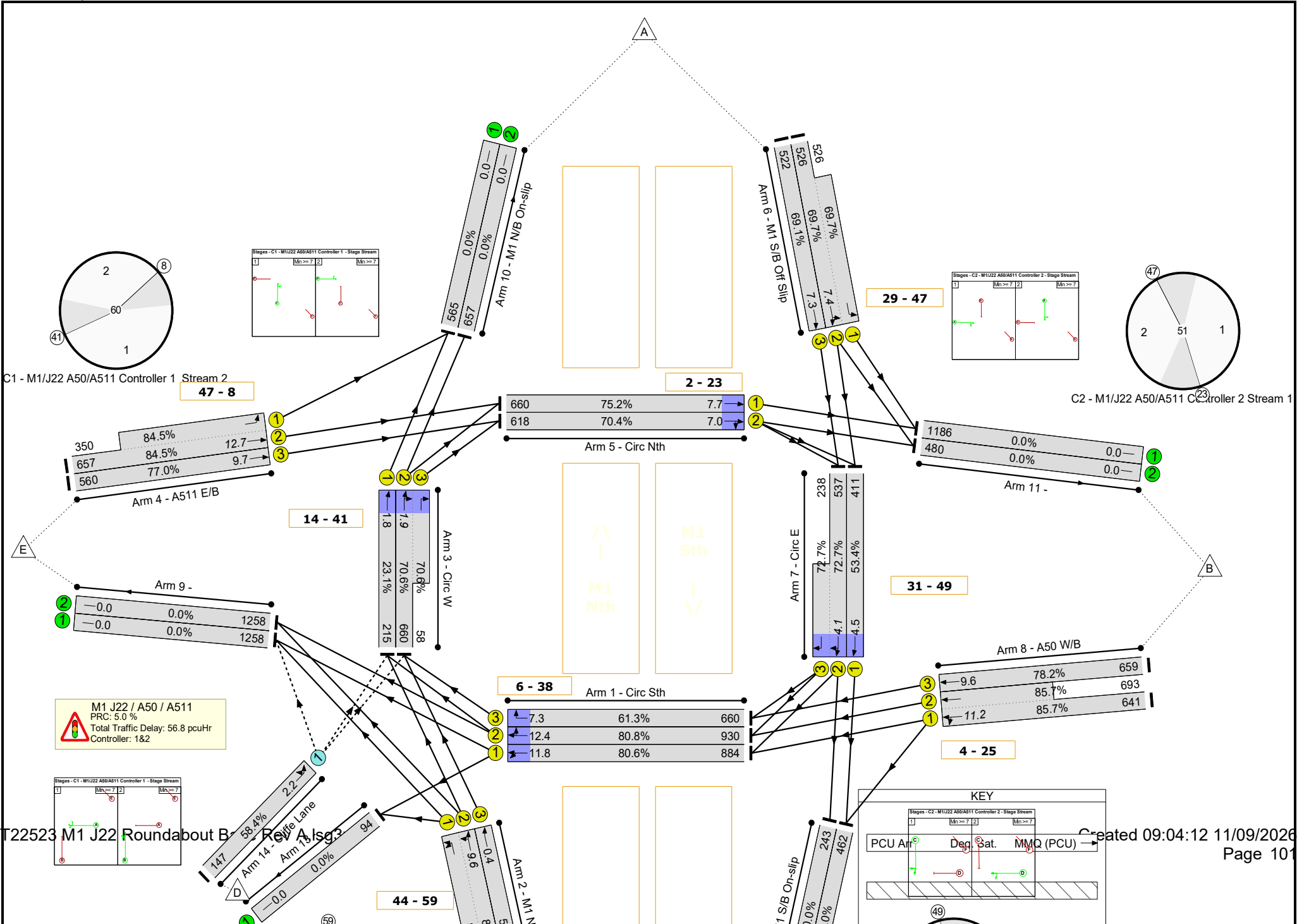


Lane Green Times

Junction: M1 J22 / A50 / A511					
Lane	Description	Type	Phases	Start Green	End Green
1/1	Circ Sth Ahead Ahead2	U	A	6	38
1/2	Circ Sth Right Ahead	U	A	6	38
1/3	Circ Sth Right	U	A	6	38
2/1	M1 N/B Off-slip Left Left2	U	B	44	59
2/2	M1 N/B Off-slip Ahead Left	U	B	44	59
2/3	M1 N/B Off-slip Ahead	U	B	44	59
3/1	Circ W Ahead	U	C	14	41
3/2	Circ W Right Ahead	U	C	14	41
3/3	Circ W Right	U	C	14	41
4/1	A511 E/B Left	U	D	47	8
4/2	A511 E/B Ahead	U	D	47	8
4/3	A511 E/B Ahead	U	D	47	8
5/1	Circ Nth Ahead	U	A	2	23
5/2	Circ Nth Right Ahead	U	A	2	23
6/1	M1 S/B Off Slip Left	U	B	29	47
6/2	M1 S/B Off Slip Ahead Left	U	B	29	47
6/3	M1 S/B Off Slip Ahead	U	B	29	47
7/1	Circ E Ahead	U	C	31	49
7/2	Circ E Right Ahead	U	C	31	49
7/3	Circ E Right	U	C	31	49
8/1	A50 W/B Ahead Left	U	D	4	25
8/2	A50 W/B Ahead	U	D	4	25
8/3	A50 W/B Ahead	U	D	4	25

Detailed Input Data And Results
Network Layout Diagram

Detailed Input Data And Results



Detailed Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Bonus Green	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	-	85.7%
M1 J22 / A50 / A511	-	-	N/A	-	-		-	-	-	-	-	-	-	85.7%
1/1	Circ Sth Ahead Ahead2	U	1:1	N/A	C1:A		1	32	-	-	884	1995	1097	80.6%
1/2	Circ Sth Right Ahead	U	1:1	N/A	C1:A		1	32	-	-	930	2093	1151	80.8%
1/3	Circ Sth Right	U	1:1	N/A	C1:A		1	32	-	-	660	1956	1076	61.3%
2/2+2/1	M1 N/B Off-slip Ahead Left Left2	U	1:1	N/A	C1:B		1	15	-	-	891	1966:1977	524+527	84.7 : 84.8%
2/3	M1 N/B Off-slip Ahead	U	1:1	N/A	C1:B		1	15	-	-	31	1978	527	5.9%
3/1	Circ W Ahead	U	1:2	N/A	C1:C		1	27	-	-	215	1995	931	23.1%
3/2+3/3	Circ W Right Ahead	U	1:2	N/A	C1:C		1	27	-	-	718	2132:1995	935+82	70.6 : 70.6%
4/2+4/1	A511 E/B Ahead Left	U	1:2	N/A	C1:D		1	21	-	-	1007	2120:1966	777+414	84.5 : 84.5%
4/3	A511 E/B Ahead	U	1:2	N/A	C1:D		1	21	-	-	560	1983	727	77.0%
5/1	Circ Nth Ahead	U	2:1	N/A	C2:A		1	21	-	-	660	2034	877	75.2%
5/2	Circ Nth Right Ahead	U	2:1	N/A	C2:A		1	21	-	-	618	2034	877	70.4%
6/2+6/1	M1 S/B Off Slip Ahead Left	U	2:1	N/A	C2:B		1	18	-	-	1052	2027:2027	755+755	69.7 : 69.7%
6/3	M1 S/B Off Slip Ahead	U	2:1	N/A	C2:B		1	18	-	-	522	2027	755	69.1%
7/1	Circ E Ahead	U	2:2	N/A	C2:C		1	18	-	-	411	2065	769	53.4%
7/2+7/3	Circ E Right Ahead	U	2:2	N/A	C2:C		1	18	-	-	775	2181:2025	738+327	72.7 : 72.7%

Detailed Input Data And Results

8/1+8/2	A50 W/B Ahead Left	U	2:2	N/A	C2:D		1	21	-	-	1334	1953:2090	748+809	85.7 : 85.7%
8/3	A50 W/B Ahead	U	2:2	N/A	C2:D		1	21	-	-	659	1953	842	78.2%
9/1		U	N/A	N/A	-		-	-	-	-	1258	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	-	1258	Inf	Inf	0.0%
10/1	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	565	Inf	Inf	0.0%
10/2	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	657	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	-	1186	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	-	480	Inf	Inf	0.0%
12/1	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	462	Inf	Inf	0.0%
12/2	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	243	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	-	94	Inf	Inf	0.0%
14/1	Cliffe Lane Left Left2	O	N/A	N/A	-		-	-	-	-	147	2005	252	58.4%

Detailed Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
Network	-	-	68	79	0	42.1	14.6	0.0	56.8	-	-	-	-	
M1 J22 / A50 / A511	-	-	68	79	0	42.1	14.6	0.0	56.8	-	-	-	-	
1/1	884	884	-	-	-	2.7	0.0	-	2.7	10.9	11.8	0.0	11.8	
1/2	930	930	-	-	-	2.8	0.0	-	2.8	10.9	12.4	0.0	12.4	
1/3	660	660	-	-	-	1.7	0.0	-	1.7	9.2	7.3	0.0	7.3	
2/2+2/1	891	891	-	-	-	5.2	2.7	-	7.8	31.7	7.0	2.7	9.6	
2/3	31	31	-	-	-	0.1	0.0	-	0.2	20.1	0.4	0.0	0.4	
3/1	215	215	-	-	-	0.6	0.0	-	0.6	10.3	1.8	0.0	1.8	
3/2+3/3	718	718	-	-	-	1.1	0.0	-	1.1	5.7	1.9	0.0	1.9	
4/2+4/1	1007	1007	-	-	-	4.6	2.7	-	7.3	26.0	10.0	2.7	12.7	
4/3	560	560	-	-	-	2.6	1.6	-	4.3	27.3	8.1	1.6	9.7	
5/1	660	660	-	-	-	2.2	0.0	-	2.2	12.2	7.7	0.0	7.7	
5/2	618	618	-	-	-	2.0	0.0	-	2.0	11.8	7.0	0.0	7.0	
6/2+6/1	1052	1052	-	-	-	4.0	1.1	-	5.1	17.5	6.3	1.1	7.4	
6/3	522	522	-	-	-	2.0	1.1	-	3.1	21.2	6.2	1.1	7.3	
7/1	411	411	-	-	-	1.5	0.0	-	1.5	12.9	4.5	0.0	4.5	
7/2+7/3	775	775	-	-	-	1.8	0.0	-	1.8	8.2	4.1	0.0	4.1	
8/1+8/2	1334	1334	-	-	-	4.6	2.9	-	7.5	20.2	8.3	2.9	11.2	
8/3	659	659	-	-	-	2.3	1.8	-	4.0	22.1	7.9	1.8	9.6	
9/1	1258	1258	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/2	1258	1258	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	565	565	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/2	657	657	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	1186	1186	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

Detailed Input Data And Results

11/2	480	480	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/1	462	462	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/2	243	243	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
13/1	94	94	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
14/1	147	147	68	79	0	0.4	0.7	-	1.1	27.1	1.5	0.7	2.2	
C1 - M1/J22 A50/A511 Controller 1 Stream: 1 PRC for Signalled Lanes (%) 6.1 Total Delay for Signalled Lanes (pcuHr) 15.21 Cycle Time (s) 60 C1 - M1/J22 A50/A511 Controller 1 Stream: 2 PRC for Signalled Lanes (%) 6.5 Total Delay for Signalled Lanes (pcuHr) 13.26 Cycle Time (s) 60 C2 - M1/J22 A50/A511 Controller 2 Stream: 1 PRC for Signalled Lanes (%) 19.6 Total Delay for Signalled Lanes (pcuHr) 12.45 Cycle Time (s) 51 C2 - M1/J22 A50/A511 Controller 2 Stream: 2 PRC for Signalled Lanes (%) 5.0 Total Delay for Signalled Lanes (pcuHr) 14.75 Cycle Time (s) 51 PRC Over All Lanes (%) 5.0 Total Delay Over All Lanes(pcuHr) 56.77														

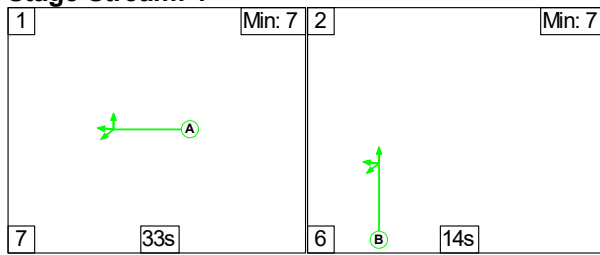
Detailed Input Data And Results

Scenario 7: '2036 Future Base AM Peak' (FG7: '2036 Future Base AM Peak', Plan 1: 'Network Control Plan 1')

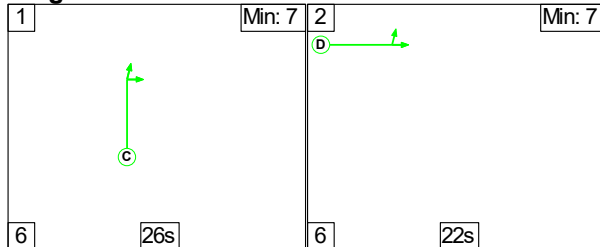
Controller :C1 - M1/J22 A50/A511 Controller 1

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	33	14
Change Point	9	49

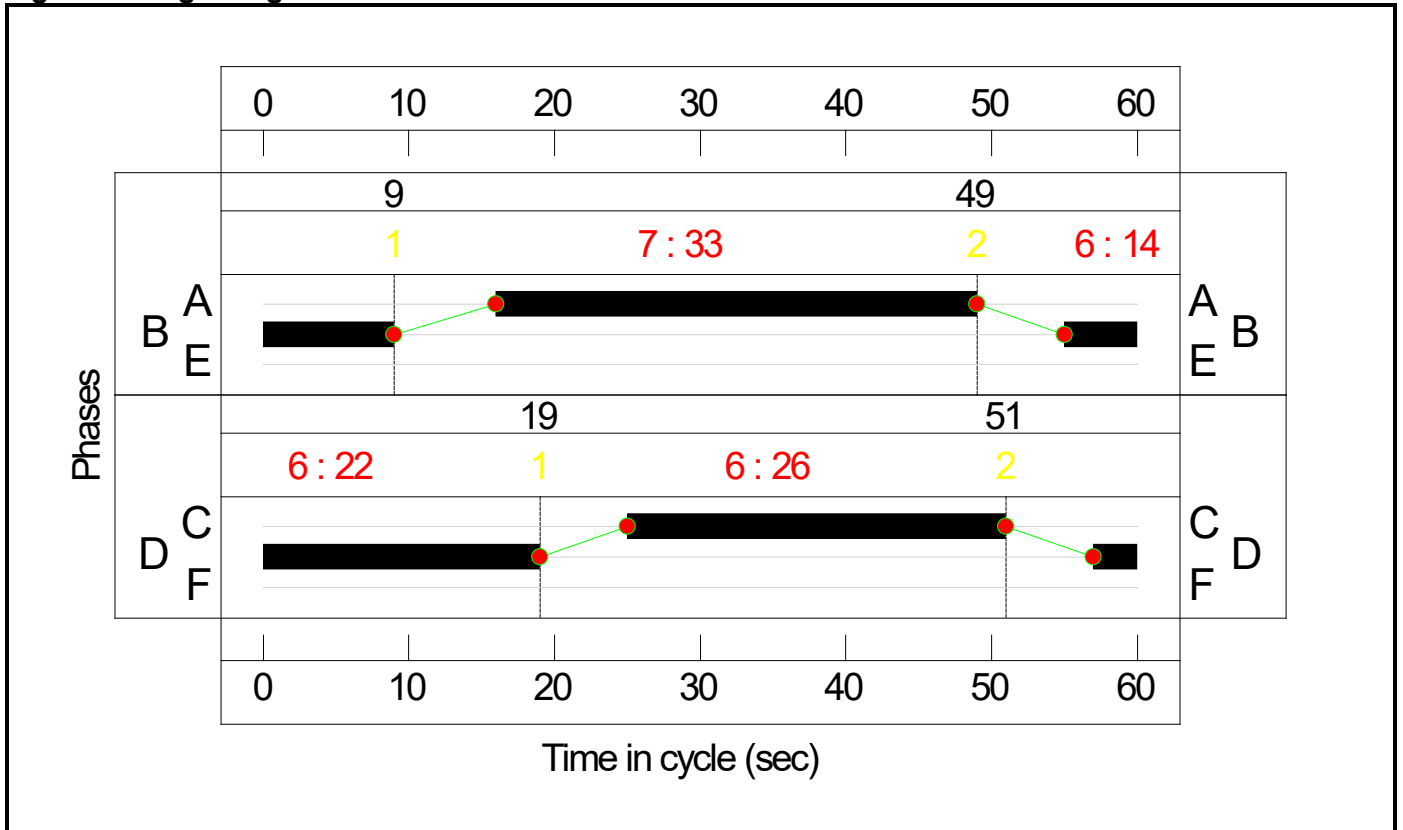
Stage Stream: 2

Stage	1	2
Duration	26	22
Change Point	19	51

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Sth Right Ahead Ahead2	Traffic	1	33	16	49
B	M1 N/B Off-slip Ahead Left Left2	Traffic	1	14	55	9
C	Circ W Right Ahead	Traffic	2	26	25	51
D	A511 E/B Ahead Left	Traffic	2	22	57	19
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

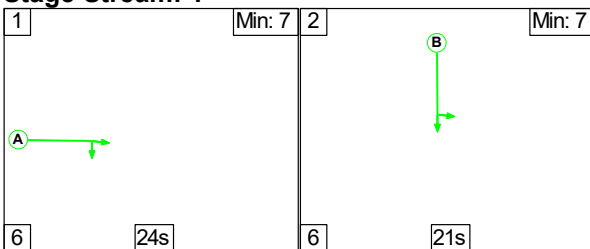
Signal Timings Diagram



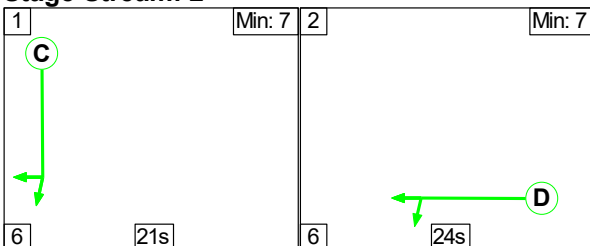
Controller : C2 - M1/J22 A50/A511 Controller 2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	24	21
Change Point	4	34

Detailed Input Data And Results

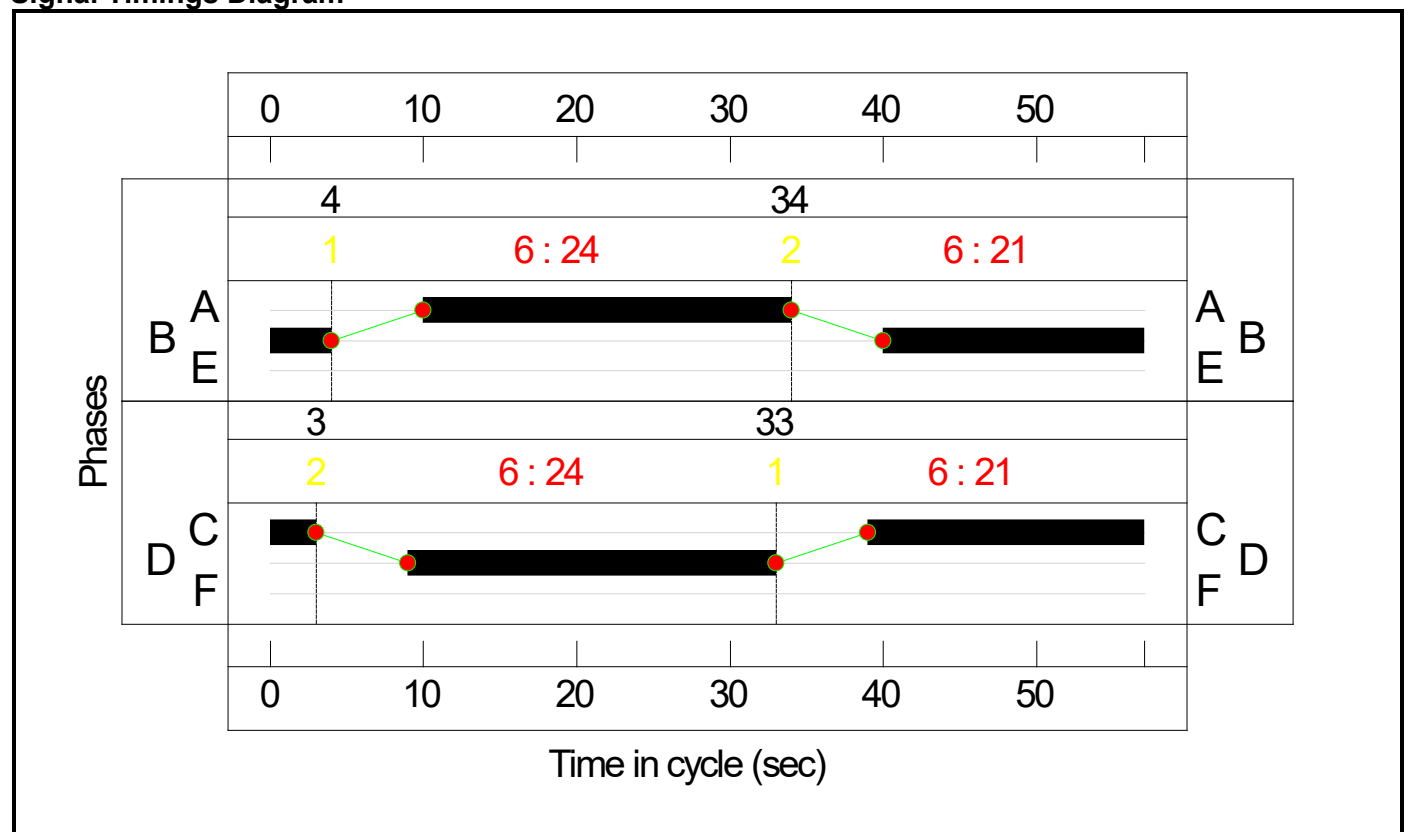
Stage Stream: 2

Stage	1	2
Duration	21	24
Change Point	33	3

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Nth Right Ahead	Traffic	1	24	10	34
B	M1 S/B Off Slip Ahead Left	Traffic	1	21	40	4
C	Circ E Right Ahead	Traffic	2	21	39	3
D	A50 W/B Ahead Left	Traffic	2	24	9	33
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

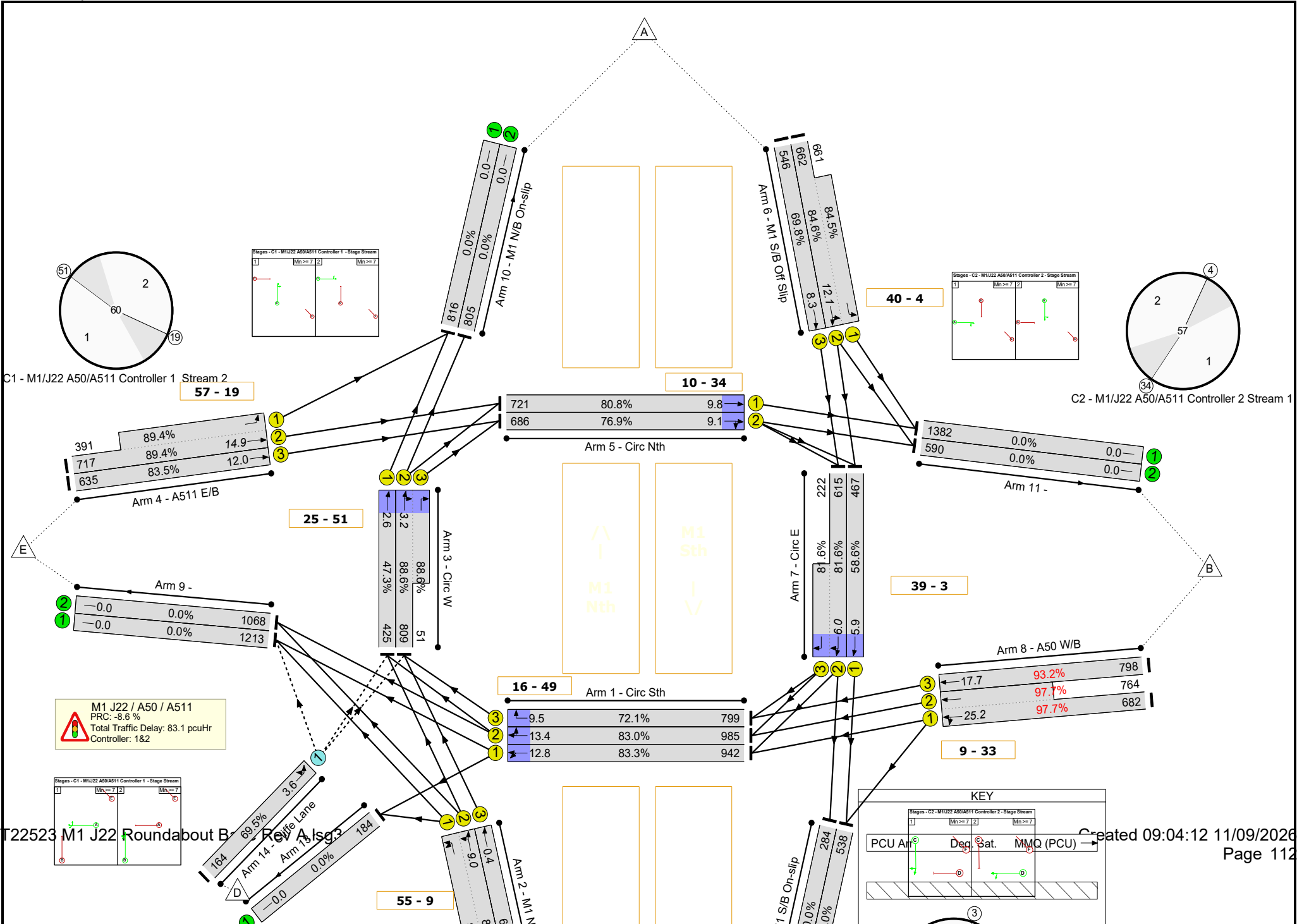
Signal Timings Diagram



Lane Green Times

Junction: M1 J22 / A50 / A511					
Lane	Description	Type	Phases	Start Green	End Green
1/1	Circ Sth Ahead Ahead2	U	A	16	49
1/2	Circ Sth Right Ahead	U	A	16	49
1/3	Circ Sth Right	U	A	16	49
2/1	M1 N/B Off-slip Left Left2	U	B	55	9
2/2	M1 N/B Off-slip Ahead Left	U	B	55	9
2/3	M1 N/B Off-slip Ahead	U	B	55	9
3/1	Circ W Ahead	U	C	25	51
3/2	Circ W Right Ahead	U	C	25	51
3/3	Circ W Right	U	C	25	51
4/1	A511 E/B Left	U	D	57	19
4/2	A511 E/B Ahead	U	D	57	19
4/3	A511 E/B Ahead	U	D	57	19
5/1	Circ Nth Ahead	U	A	10	34
5/2	Circ Nth Right Ahead	U	A	10	34
6/1	M1 S/B Off Slip Left	U	B	40	4
6/2	M1 S/B Off Slip Ahead Left	U	B	40	4
6/3	M1 S/B Off Slip Ahead	U	B	40	4
7/1	Circ E Ahead	U	C	39	3
7/2	Circ E Right Ahead	U	C	39	3
7/3	Circ E Right	U	C	39	3
8/1	A50 W/B Ahead Left	U	D	9	33
8/2	A50 W/B Ahead	U	D	9	33
8/3	A50 W/B Ahead	U	D	9	33

Detailed Input Data And Results



Detailed Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Bonus Green	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	-	97.7%
M1 J22 / A50 / A511	-	-	N/A	-	-		-	-	-	-	-	-	-	97.7%
1/1	Circ Sth Ahead Ahead2	U	1:1	N/A	C1:A		1	33	-	-	942	1995	1131	83.3%
1/2	Circ Sth Right Ahead	U	1:1	N/A	C1:A		1	33	-	-	985	2093	1186	83.0%
1/3	Circ Sth Right	U	1:1	N/A	C1:A		1	33	-	-	799	1956	1108	72.1%
2/2+2/1	M1 N/B Off-slip Ahead Left Left2	U	1:1	N/A	C1:B		1	14	-	-	829	1966:1977	492+494	84.0 : 84.2%
2/3	M1 N/B Off-slip Ahead	U	1:1	N/A	C1:B		1	14	-	-	31	1978	494	6.3%
3/1	Circ W Ahead	U	1:2	N/A	C1:C		1	26	-	-	425	1995	898	47.3%
3/2+3/3	Circ W Right Ahead	U	1:2	N/A	C1:C		1	26	-	-	860	2132:1995	913+58	88.6 : 88.6%
4/2+4/1	A511 E/B Ahead Left	U	1:2	N/A	C1:D		1	22	-	-	1108	2120:1966	802+437	89.4 : 89.4%
4/3	A511 E/B Ahead	U	1:2	N/A	C1:D		1	22	-	-	635	1983	760	83.5%
5/1	Circ Nth Ahead	U	2:1	N/A	C2:A		1	24	-	-	721	2034	892	80.8%
5/2	Circ Nth Right Ahead	U	2:1	N/A	C2:A		1	24	-	-	686	2034	892	76.9%
6/2+6/1	M1 S/B Off Slip Ahead Left	U	2:1	N/A	C2:B		1	21	-	-	1323	2027:2027	782+782	84.6 : 84.5%
6/3	M1 S/B Off Slip Ahead	U	2:1	N/A	C2:B		1	21	-	-	546	2027	782	69.8%
7/1	Circ E Ahead	U	2:2	N/A	C2:C		1	21	-	-	467	2065	797	58.6%
7/2+7/3	Circ E Right Ahead	U	2:2	N/A	C2:C		1	21	-	-	837	2182:2025	753+272	81.6 : 81.6%

Detailed Input Data And Results

8/1+8/2	A50 W/B Ahead Left	U	2:2	N/A	C2:D		1	24	-	-	1446	1953:2090	698+782	97.7 : 97.7%
8/3	A50 W/B Ahead	U	2:2	N/A	C2:D		1	24	-	-	798	1953	857	93.2%
9/1		U	N/A	N/A	-		-	-	-	-	1213	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	-	1068	Inf	Inf	0.0%
10/1	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	816	Inf	Inf	0.0%
10/2	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	805	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	-	1382	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	-	590	Inf	Inf	0.0%
12/1	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	538	Inf	Inf	0.0%
12/2	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	284	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	-	184	Inf	Inf	0.0%
14/1	Cliffe Lane Left Left2	O	N/A	N/A	-		-	-	-	-	164	2005	236	69.5%

Detailed Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
Network	-	-	52	112	0	51.0	32.1	0.0	83.1	-	-	-	-	
M1 J22 / A50 / A511	-	-	52	112	0	51.0	32.1	0.0	83.1	-	-	-	-	
1/1	942	942	-	-	-	2.8	0.0	-	2.8	10.7	12.8	0.0	12.8	
1/2	985	985	-	-	-	2.9	0.0	-	2.9	10.6	13.4	0.0	13.4	
1/3	799	799	-	-	-	2.1	0.0	-	2.1	9.5	9.5	0.0	9.5	
2/2+2/1	829	829	-	-	-	4.9	2.6	-	7.5	32.5	6.5	2.6	9.0	
2/3	31	31	-	-	-	0.1	0.0	-	0.2	21.1	0.4	0.0	0.4	
3/1	425	425	-	-	-	1.0	0.0	-	1.0	8.5	2.6	0.0	2.6	
3/2+3/3	860	860	-	-	-	1.5	0.0	-	1.5	6.3	3.2	0.0	3.2	
4/2+4/1	1108	1108	-	-	-	5.0	4.0	-	8.9	29.1	11.0	4.0	14.9	
4/3	635	635	-	-	-	3.0	2.4	-	5.4	30.6	9.5	2.4	12.0	
5/1	721	721	-	-	-	2.8	0.0	-	2.8	13.9	9.8	0.0	9.8	
5/2	686	686	-	-	-	2.6	0.0	-	2.6	13.6	9.1	0.0	9.1	
6/2+6/1	1323	1323	-	-	-	5.9	2.7	-	8.5	23.2	9.4	2.7	12.1	
6/3	546	546	-	-	-	2.2	1.1	-	3.4	22.3	7.1	1.1	8.3	
7/1	467	467	-	-	-	1.9	0.0	-	1.9	14.9	5.9	0.0	5.9	
7/2+7/3	837	837	-	-	-	2.7	0.0	-	2.7	11.5	6.0	0.0	6.0	
8/1+8/2	1446	1446	-	-	-	5.6	12.4	-	18.1	45.0	12.8	12.4	25.2	
8/3	798	798	-	-	-	3.4	5.7	-	9.1	40.9	12.0	5.7	17.7	
9/1	1213	1213	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/2	1068	1068	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	816	816	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/2	805	805	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	1382	1382	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

Detailed Input Data And Results

11/2	590	590	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/1	538	538	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/2	284	284	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
13/1	184	184	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
14/1	164	164	52	112	0	0.6	1.1	-	1.7	36.9	2.5	1.1	3.6	
C1 - M1/J22 A50/A511 Controller 1 Stream: 1 PRC for Signalled Lanes (%) 6.9 Total Delay for Signalled Lanes (pcuHr): 15.48 Cycle Time (s): 60														
C1 - M1/J22 A50/A511 Controller 1 Stream: 2 PRC for Signalled Lanes (%) 0.7 Total Delay for Signalled Lanes (pcuHr): 16.86 Cycle Time (s): 60														
C2 - M1/J22 A50/A511 Controller 2 Stream: 1 PRC for Signalled Lanes (%) 6.4 Total Delay for Signalled Lanes (pcuHr): 17.29 Cycle Time (s): 57														
C2 - M1/J22 A50/A511 Controller 2 Stream: 2 PRC for Signalled Lanes (%) -8.6 Total Delay for Signalled Lanes (pcuHr): 31.76 Cycle Time (s): 57														
PRC Over All Lanes (%) -8.6 Total Delay Over All Lanes(pcuHr): 83.07														

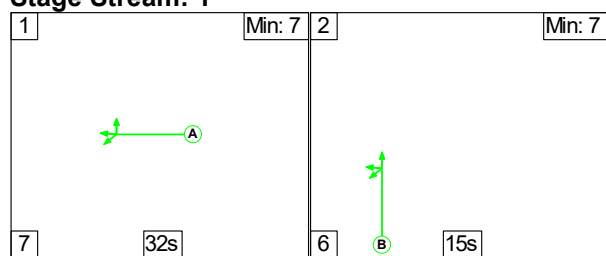
Detailed Input Data And Results

Scenario 8: '2036 Future Base PM Peak ' (FG8: '2036 Future Base PM Peak', Plan 1: 'Network Control Plan 1')

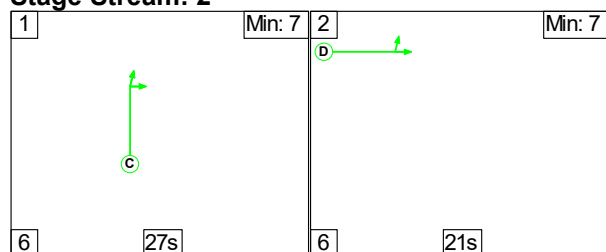
Controller :C1 - M1/J22 A50/A511 Controller 1

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

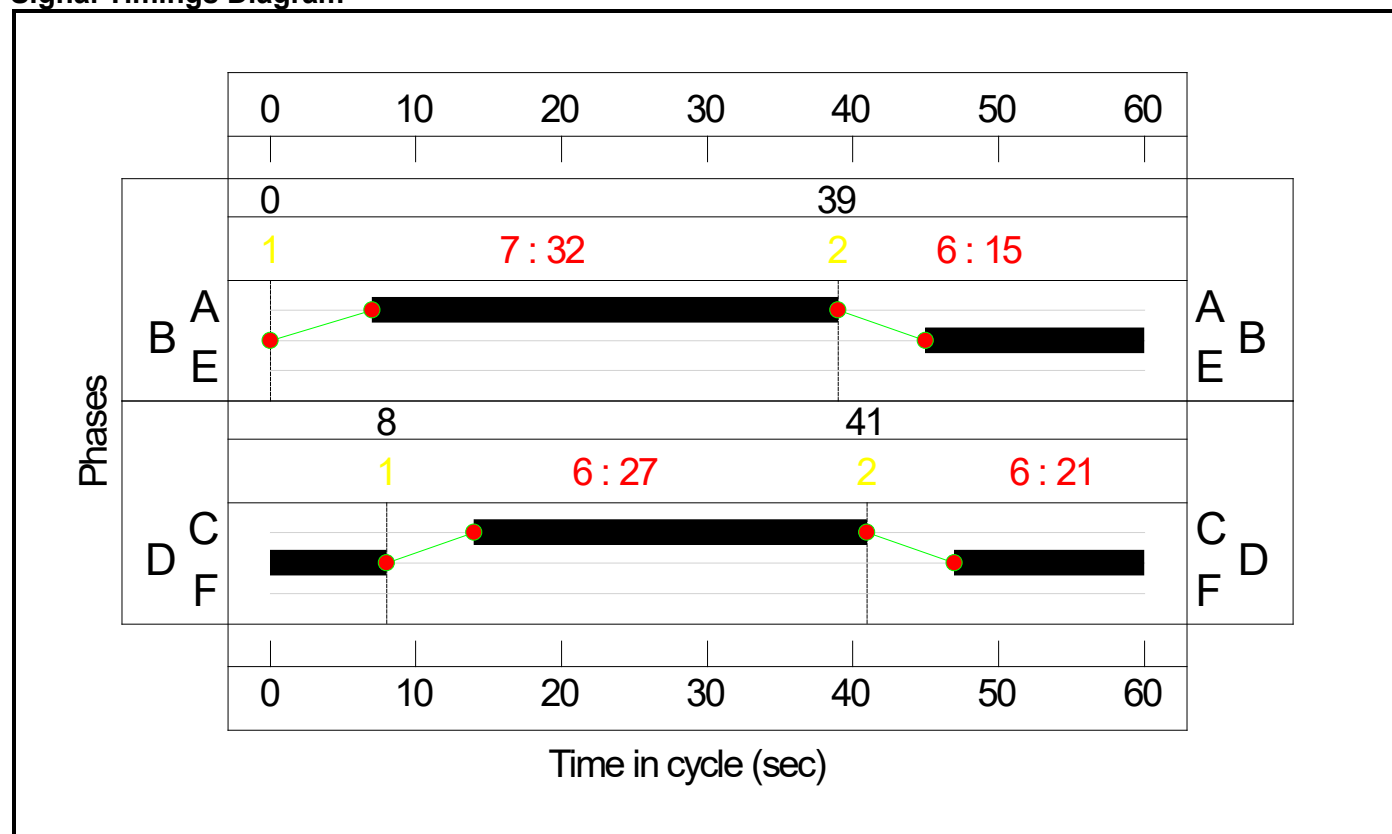
Stage	1	2
Duration	32	15
Change Point	0	39

Stage Stream: 2

Stage	1	2
Duration	27	21
Change Point	8	41

Phase Timings

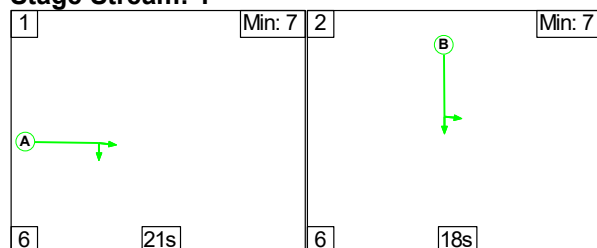
Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Sth Right Ahead Ahead2	Traffic	1	32	7	39
B	M1 N/B Off-slip Ahead Left Left2	Traffic	1	15	45	0
C	Circ W Right Ahead	Traffic	2	27	14	41
D	A511 E/B Ahead Left	Traffic	2	21	47	8
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

Signal Timings Diagram

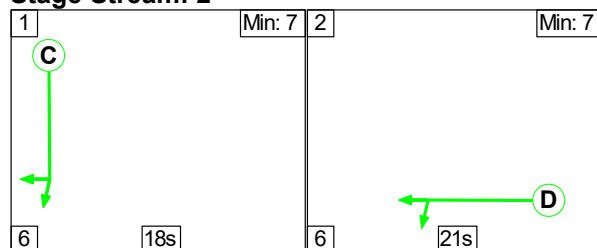
Controller :C2 - M1/J22 A50/A511 Controller 2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2

**Stage Timings**

Stage Stream: 1

Stage	1	2
Duration	21	18
Change Point	47	23

Detailed Input Data And Results

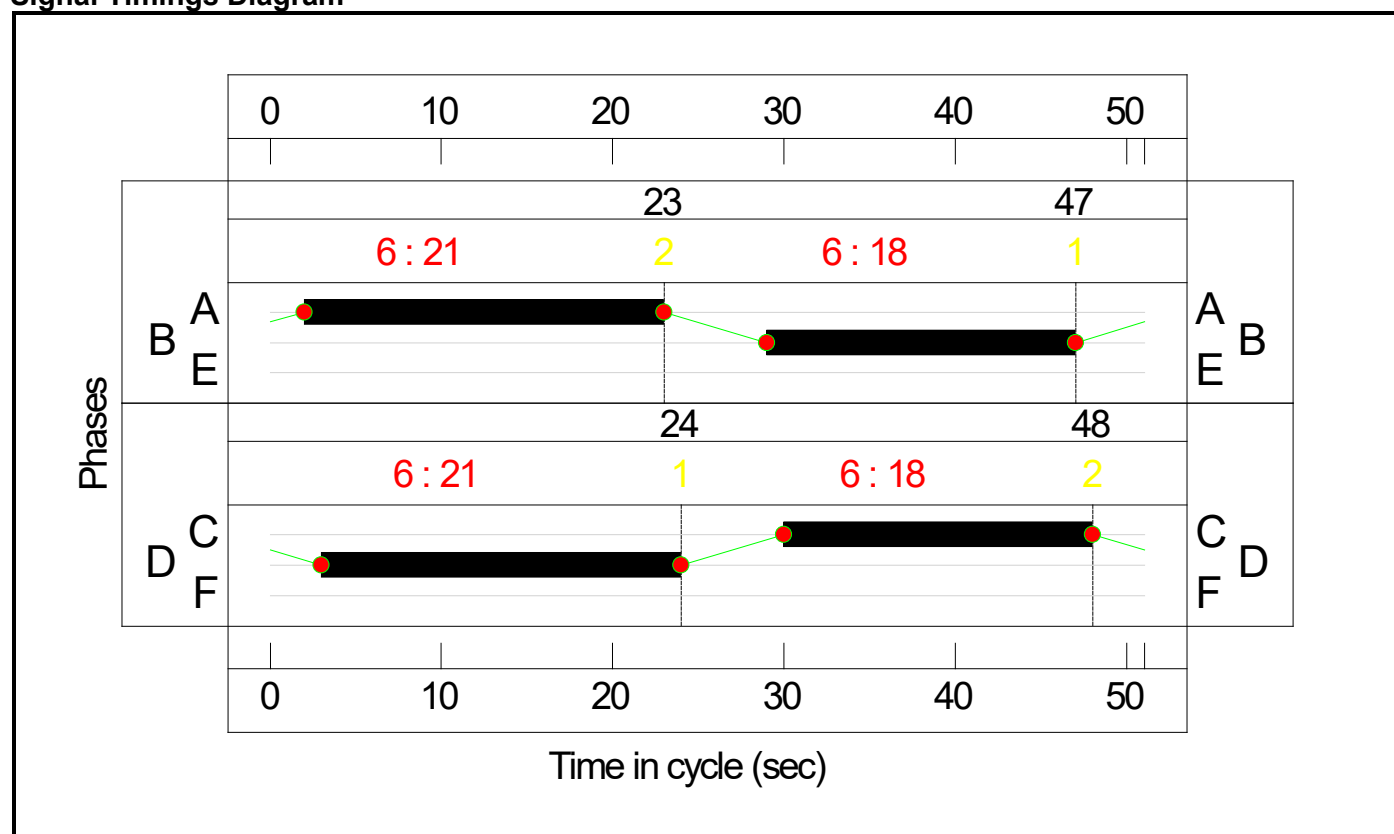
Stage Stream: 2

Stage	1	2
Duration	18	21
Change Point	24	48

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Nth Right Ahead	Traffic	1	21	2	23
B	M1 S/B Off Slip Ahead Left	Traffic	1	18	29	47
C	Circ E Right Ahead	Traffic	2	18	30	48
D	A50 W/B Ahead Left	Traffic	2	21	3	24
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

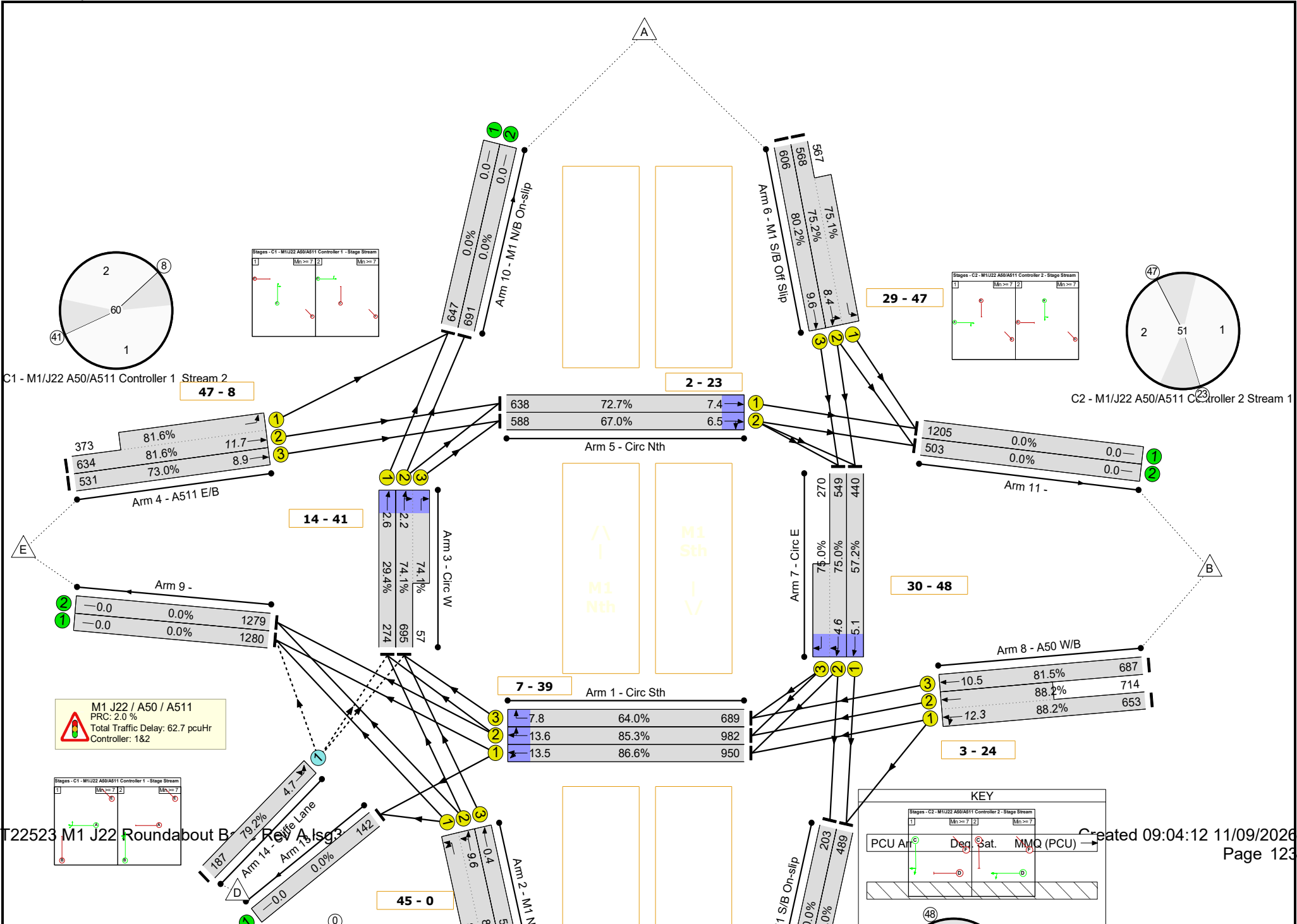
Signal Timings Diagram



Lane Green Times

Junction: M1 J22 / A50 / A511					
Lane	Description	Type	Phases	Start Green	End Green
1/1	Circ Sth Ahead Ahead2	U	A	7	39
1/2	Circ Sth Right Ahead	U	A	7	39
1/3	Circ Sth Right	U	A	7	39
2/1	M1 N/B Off-slip Left Left2	U	B	45	0
2/2	M1 N/B Off-slip Ahead Left	U	B	45	0
2/3	M1 N/B Off-slip Ahead	U	B	45	0
3/1	Circ W Ahead	U	C	14	41
3/2	Circ W Right Ahead	U	C	14	41
3/3	Circ W Right	U	C	14	41
4/1	A511 E/B Left	U	D	47	8
4/2	A511 E/B Ahead	U	D	47	8
4/3	A511 E/B Ahead	U	D	47	8
5/1	Circ Nth Ahead	U	A	2	23
5/2	Circ Nth Right Ahead	U	A	2	23
6/1	M1 S/B Off Slip Left	U	B	29	47
6/2	M1 S/B Off Slip Ahead Left	U	B	29	47
6/3	M1 S/B Off Slip Ahead	U	B	29	47
7/1	Circ E Ahead	U	C	30	48
7/2	Circ E Right Ahead	U	C	30	48
7/3	Circ E Right	U	C	30	48
8/1	A50 W/B Ahead Left	U	D	3	24
8/2	A50 W/B Ahead	U	D	3	24
8/3	A50 W/B Ahead	U	D	3	24

Detailed Input Data And Results



Detailed Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Bonus Green	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	-	88.2%
M1 J22 / A50 / A511	-	-	N/A	-	-		-	-	-	-	-	-	-	88.2%
1/1	Circ Sth Ahead Ahead2	U	1:1	N/A	C1:A		1	32	-	-	950	1995	1097	86.6%
1/2	Circ Sth Right Ahead	U	1:1	N/A	C1:A		1	32	-	-	982	2093	1151	85.3%
1/3	Circ Sth Right	U	1:1	N/A	C1:A		1	32	-	-	689	1956	1076	64.0%
2/2+2/1	M1 N/B Off-slip Ahead Left Left2	U	1:1	N/A	C1:B		1	15	-	-	891	1966:1977	524+527	84.7 : 84.8%
2/3	M1 N/B Off-slip Ahead	U	1:1	N/A	C1:B		1	15	-	-	28	1978	527	5.3%
3/1	Circ W Ahead	U	1:2	N/A	C1:C		1	27	-	-	274	1995	931	29.4%
3/2+3/3	Circ W Right Ahead	U	1:2	N/A	C1:C		1	27	-	-	752	2132:1995	937+77	74.1 : 74.1%
4/2+4/1	A511 E/B Ahead Left	U	1:2	N/A	C1:D		1	21	-	-	1007	2120:1966	777+457	81.6 : 81.6%
4/3	A511 E/B Ahead	U	1:2	N/A	C1:D		1	21	-	-	531	1983	727	73.0%
5/1	Circ Nth Ahead	U	2:1	N/A	C2:A		1	21	-	-	638	2034	877	72.7%
5/2	Circ Nth Right Ahead	U	2:1	N/A	C2:A		1	21	-	-	588	2034	877	67.0%
6/2+6/1	M1 S/B Off Slip Ahead Left	U	2:1	N/A	C2:B		1	18	-	-	1135	2027:2027	755+755	75.2 : 75.1%
6/3	M1 S/B Off Slip Ahead	U	2:1	N/A	C2:B		1	18	-	-	606	2027	755	80.2%
7/1	Circ E Ahead	U	2:2	N/A	C2:C		1	18	-	-	440	2065	769	57.2%
7/2+7/3	Circ E Right Ahead	U	2:2	N/A	C2:C		1	18	-	-	819	2178:2025	732+360	75.0 : 75.0%

Detailed Input Data And Results

8/1+8/2	A50 W/B Ahead Left	U	2:2	N/A	C2:D		1	21	-	-	1367	1953:2090	740+809	88.2 : 88.2%
8/3	A50 W/B Ahead	U	2:2	N/A	C2:D		1	21	-	-	687	1953	842	81.5%
9/1		U	N/A	N/A	-		-	-	-	-	1280	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	-	1279	Inf	Inf	0.0%
10/1	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	647	Inf	Inf	0.0%
10/2	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	691	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	-	1205	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	-	503	Inf	Inf	0.0%
12/1	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	489	Inf	Inf	0.0%
12/2	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	203	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	-	142	Inf	Inf	0.0%
14/1	Cliffe Lane Left Left2	O	N/A	N/A	-		-	-	-	-	187	2005	236	79.2%

Detailed Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
Network	-	-	53	134	0	45.4	17.2	0.0	62.7	-	-	-	-	
M1 J22 / A50 / A511	-	-	53	134	0	45.4	17.2	0.0	62.7	-	-	-	-	
1/1	950	950	-	-	-	3.1	0.0	-	3.1	11.6	13.5	0.0	13.5	
1/2	982	982	-	-	-	3.1	0.0	-	3.1	11.4	13.6	0.0	13.6	
1/3	689	689	-	-	-	1.8	0.0	-	1.8	9.4	7.8	0.0	7.8	
2/2+2/1	891	891	-	-	-	5.2	2.7	-	7.8	31.7	7.0	2.7	9.6	
2/3	28	28	-	-	-	0.1	0.0	-	0.2	20.1	0.3	0.0	0.4	
3/1	274	274	-	-	-	0.8	0.0	-	0.8	11.1	2.6	0.0	2.6	
3/2+3/3	752	752	-	-	-	1.3	0.0	-	1.3	6.0	2.2	0.0	2.2	
4/2+4/1	1007	1007	-	-	-	4.6	2.2	-	6.7	24.1	9.5	2.2	11.7	
4/3	531	531	-	-	-	2.4	1.3	-	3.8	25.5	7.5	1.3	8.9	
5/1	638	638	-	-	-	2.1	0.0	-	2.1	12.0	7.4	0.0	7.4	
5/2	588	588	-	-	-	1.9	0.0	-	1.9	11.6	6.5	0.0	6.5	
6/2+6/1	1135	1135	-	-	-	4.4	1.5	-	5.9	18.7	6.9	1.5	8.4	
6/3	606	606	-	-	-	2.4	2.0	-	4.4	26.1	7.6	2.0	9.6	
7/1	440	440	-	-	-	1.7	0.0	-	1.7	13.9	5.1	0.0	5.1	
7/2+7/3	819	819	-	-	-	2.7	0.0	-	2.7	11.8	4.6	0.0	4.6	
8/1+8/2	1367	1367	-	-	-	4.7	3.6	-	8.3	21.9	8.7	3.6	12.3	
8/3	687	687	-	-	-	2.4	2.1	-	4.6	24.0	8.4	2.1	10.5	
9/1	1280	1280	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/2	1279	1279	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	647	647	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/2	691	691	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	1205	1205	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

Detailed Input Data And Results

11/2	503	503	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/1	489	489	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/2	203	203	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
13/1	142	142	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
14/1	187	187	53	134	0	0.7	1.8	-	2.5	47.8	2.9	1.8	4.7	
C1 - M1/J22 A50/A511 Controller 1 Stream: 1 PRC for Signalled Lanes (%) 3.9 Total Delay for Signalled Lanes (pcuHr): 15.98 Cycle Time (s): 60														
C1 - M1/J22 A50/A511 Controller 1 Stream: 2 PRC for Signalled Lanes (%) 10.3 Total Delay for Signalled Lanes (pcuHr): 12.60 Cycle Time (s): 60														
C2 - M1/J22 A50/A511 Controller 2 Stream: 1 PRC for Signalled Lanes (%) 12.2 Total Delay for Signalled Lanes (pcuHr): 14.31 Cycle Time (s): 51														
C2 - M1/J22 A50/A511 Controller 2 Stream: 2 PRC for Signalled Lanes (%) 2.0 Total Delay for Signalled Lanes (pcuHr): 17.30 Cycle Time (s): 51														
PRC Over All Lanes (%) 2.0 Total Delay Over All Lanes(pcuHr): 62.67														

APPENDIX E M1 JUNCTION 22 – PROPOSED LAYOUT LINSIG MODEL OUTPUT

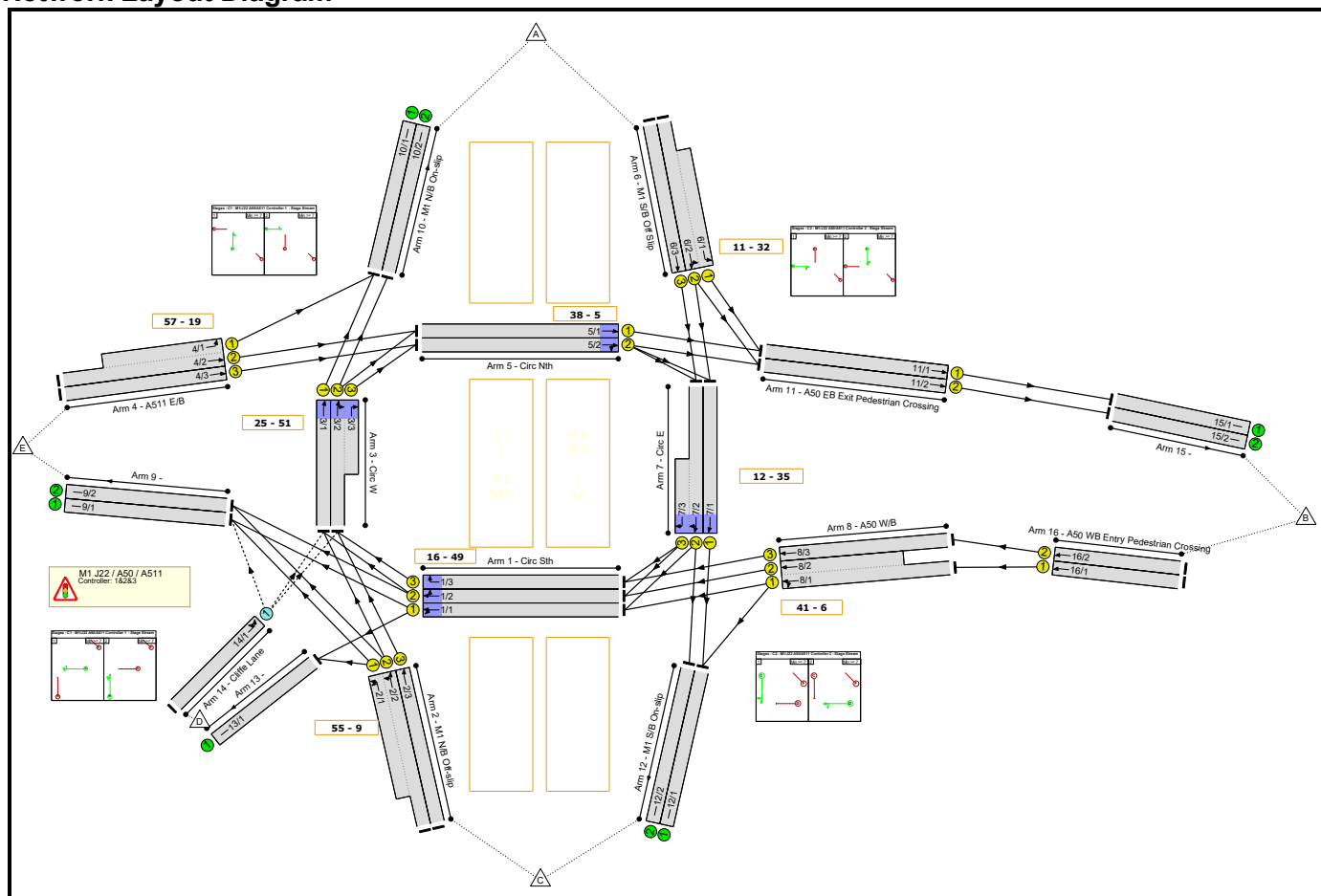
Detailed Input Data And Results

Detailed Input Data And Results

User and Project Details

Project:	
Title:	
Location:	M1 J22 / A50
Additional detail:	
File name:	T22523 M1 J22 Roundabout Proposed Rev A.lsg3x
Author:	
Company:	
Address:	
Linsig Version:	3, 3, 2, 0

Network Layout Diagram



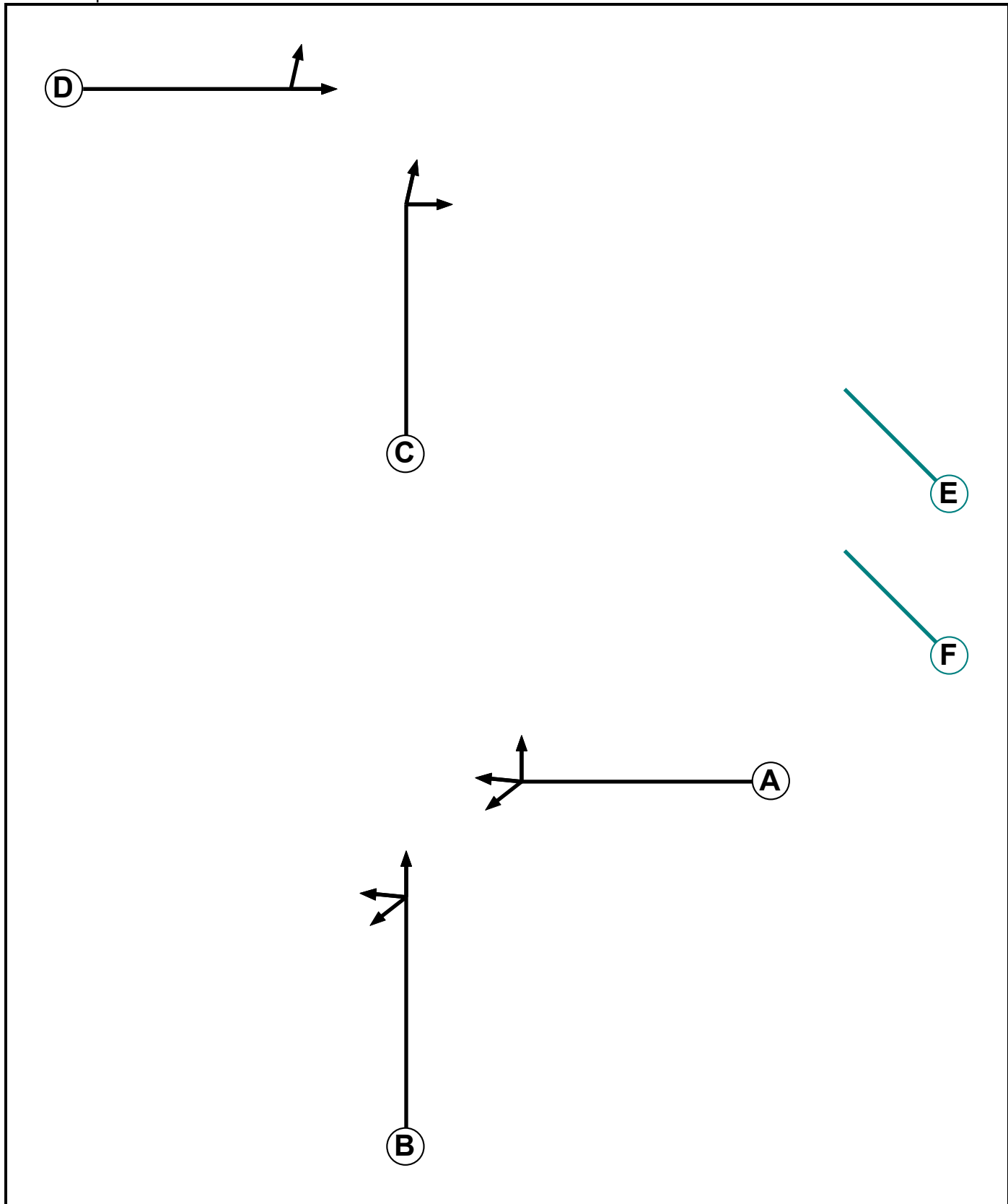
Scenarios

Number	Scenario Name	Flow Group	Network Control Plan	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	2028 Future Base + Proposed Development AM Peak	2028 Future Base + Proposed Development AM Peak	Network Control Plan 1	08:00 - 09:00	60/57/228	-4.8	84.57
2	2028 Future Base + Proposed Development PM Peak	2028 Future Base + Proposed Development PM Peak	Network Control Plan 1	17:00 - 18:00	60/51/228	4.6	61.32
3	2030 Future Base + Proposed Development AM Peak	2030 Future Base + Proposed Development AM Peak	Network Control Plan 1	08:00 - 09:00	60/57/228	-8.5	98.24
4	2030 Future Base + Proposed Development PM Peak	2030 Future Base + Proposed Development PM Peak	Network Control Plan 1	17:00 - 18:00	60/51/228	4.2	64.47
5	2036 Future Base + Proposed Development AM Peak	2036 Future Base + Proposed Development AM Peak	Network Control Plan 1	08:00 - 09:00	60/57/228	-10.5	126.11
6	2036 Future Base + Proposed Development PM Peak	2036 Future Base + Proposed Development PM Peak	Network Control Plan 1	17:00 - 18:00	60/51/228	2.5	69.90

Controller Summary

Controller	Type	SCN	Stage Stream	Num Phases	Num Stages	Controls Junctions	Controller Notes
C1 - M1/J22 A50/A511 Controller 1	Gen		Stage Stream 1	3	2	M1 J22 / A50 / A511	
			Stage Stream 2	3	2	M1 J22 / A50 / A511	
C2 - M1/J22 A50/A511 Controller 2	Pek		Stage Stream 1	3	2	M1 J22 / A50 / A511	
			Stage Stream 2	3	2	M1 J22 / A50 / A511	
C3 - A50 East Pedestrian Crossings	Gen		Stage Stream 1	2	2	M1 J22 / A50 / A511	
			Stage Stream 2	2	2	M1 J22 / A50 / A511	

Controller :C1 - M1/J22 A50/A511 Controller 1
Phase Diagram



Phase Input Data

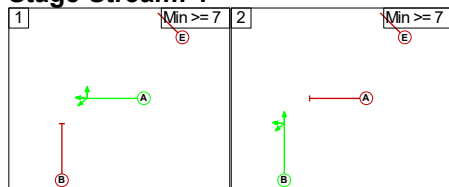
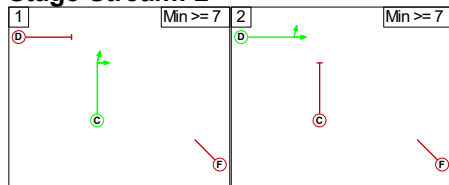
Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min (s)	Cont Min (s)
A	Traffic	1		7	7
B	Traffic	1		7	7
C	Traffic	2		7	7
D	Traffic	2		7	7
E	Dummy	1		4	4
F	Dummy	2		4	4

Phase Intergreens Matrix

		Starting Phase					
Terminating Phase		A	B	C	D	E	F
	A		6	-	-	3	-
	B	7		-	-	3	-
	C	-	-		6	-	3
	D	-	-	6		-	3
	E	2	2	-	-		-
	F	-	-	2	2	-	

Phases in Stage

Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram**Stage Stream: 1****Stage Stream: 2****Phase Delays****Stage Stream: 1**

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Stage Stream: 2

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

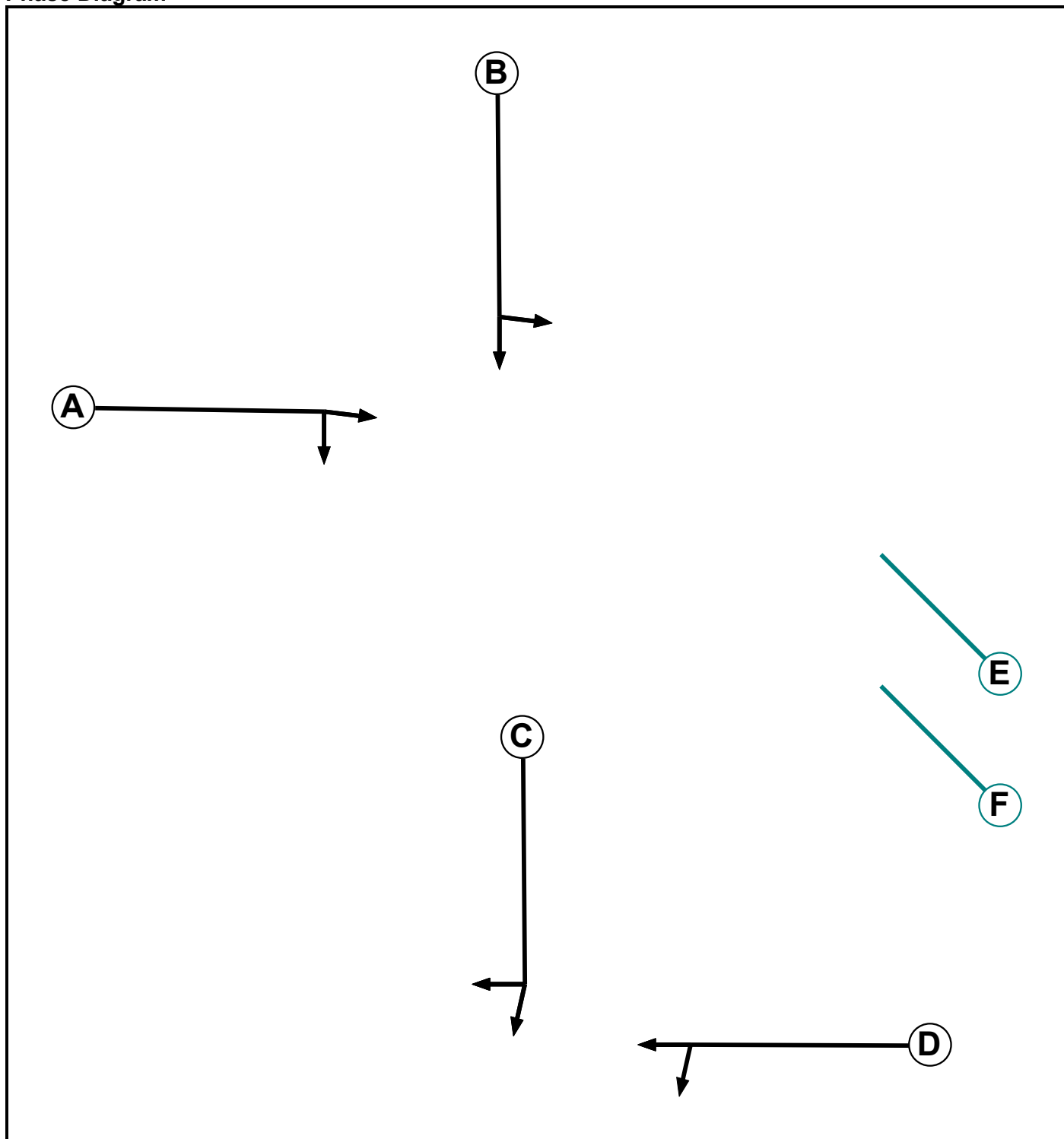
Stage Stream: 1

	To Stage		
From Stage		1	2
	1		6
	2	7	

Stage Stream: 2

	To Stage		
From Stage		1	2
	1		6
	2	6	

Phase Diagram



Phase Input Data

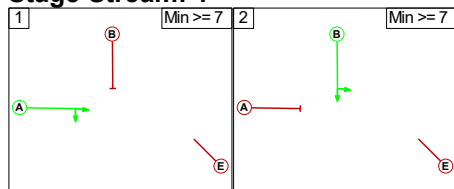
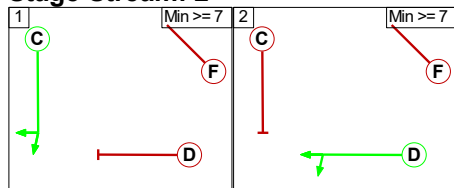
Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min (s)	Cont Min (s)
A	Traffic	1		7	7
B	Traffic	1		7	7
C	Traffic	2		7	7
D	Traffic	2		7	7
E	Dummy	1		4	4
F	Dummy	2		4	4

Phase Intergreens Matrix

Terminating Phase	Starting Phase						
		A	B	C	D	E	F
	A		6	-	-	3	-
	B	6		-	-	3	-
	C	-	-		6	-	3
	D	-	-	6		-	3
	E	2	2	-	-		-
	F	-	-	2	2	-	

Phases in Stage

Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram**Stage Stream: 1****Stage Stream: 2****Phase Delays****Stage Stream: 1**

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Detailed Input Data And Results

Stage Stream: 2

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

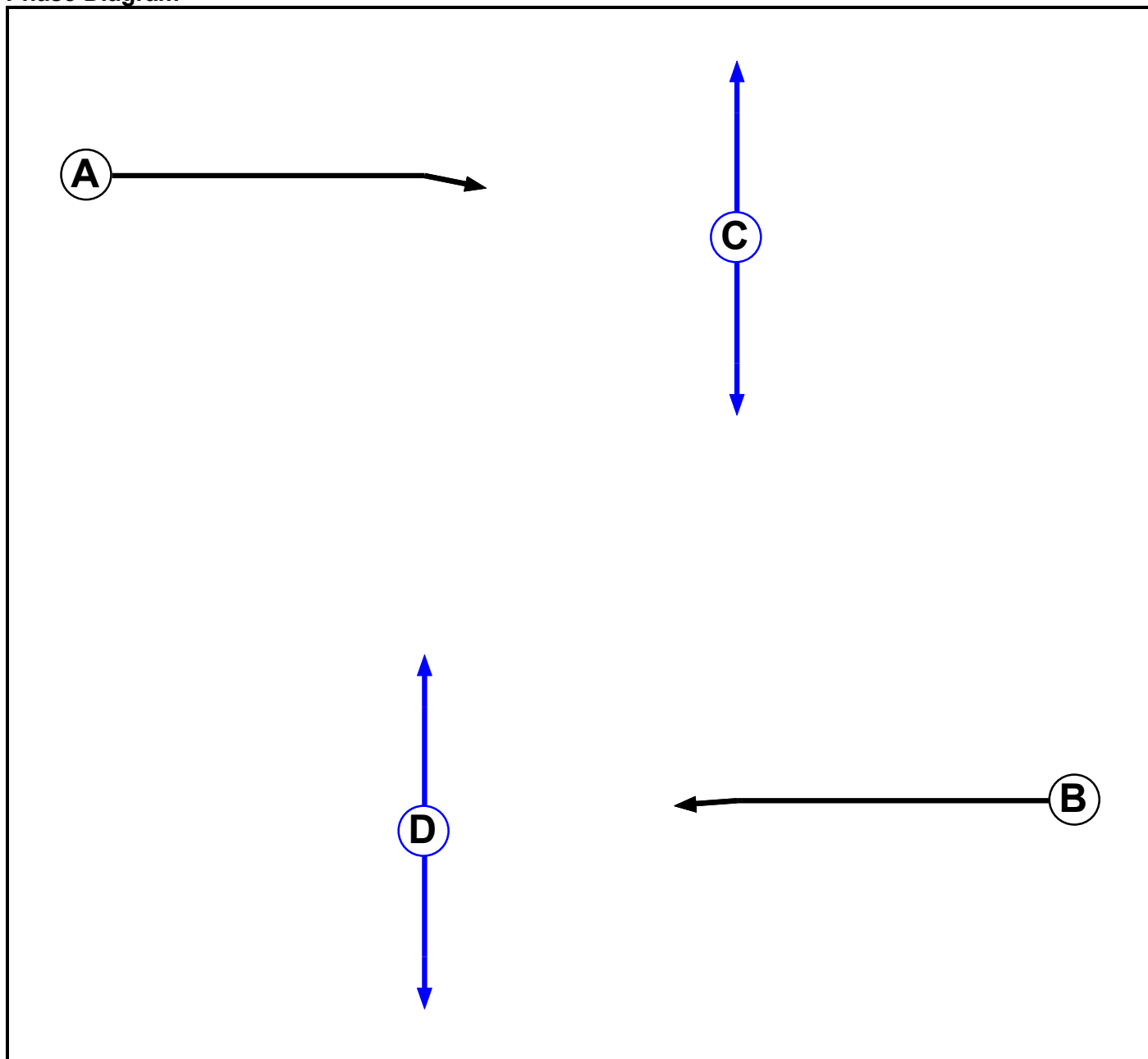
Stage Stream: 1

	To Stage	
From Stage		
	1	2
	1	6
	2	6

Stage Stream: 2

	To Stage	
From Stage		
	1	2
	1	6
	2	6

Controller :C3 - A50 East Pedestrian Crossings
Phase Diagram



Phase Input Data

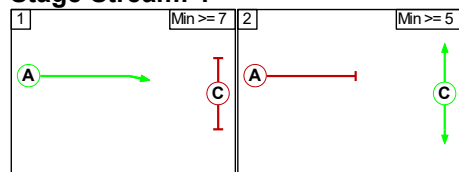
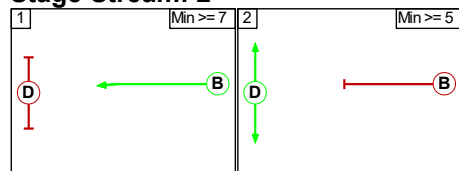
Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min (s)	Cont Min (s)
A	Traffic	1		7	7
B	Traffic	2		7	7
C	Pedestrian	1		5	5
D	Pedestrian	2		5	5

Phase Intergreens Matrix

Terminating Phase	Starting Phase				
		A	B	C	D
	A		-	5	-
	B	-		-	5
	C	8	-		-
	D	-	8	-	

Phases in Stage

Stream	Stage No.	Phases in Stage
1	1	A
1	2	C
2	1	B
2	2	D

Stage Diagram**Stage Stream: 1****Stage Stream: 2****Phase Delays****Stage Stream: 1**

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Stage Stream: 2

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change**Stage Stream: 1**

From Stage	To Stage		
	1	2	
	1	5	
	2	8	

Detailed Input Data And Results

Stage Stream: 2

From Stage	To Stage		
		1	2
	1		5
	2	8	

Lane Input Data

Junction: M1 J22 / A50 / A511												
Lane	Lane Type	Phases	Start Disp. (s)	End Disp. (s)	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient (%)	Nearside Lane	Turns	Turning Radius (m)
1/1 (Circ Sth)	U	A	2	3	17.4	Geom	-	3.80	0.00	Y	Arm 9 Ahead	Inf
											Arm 13 Ahead	Inf
1/2 (Circ Sth)	U	A	2	3	17.4	Geom	-	3.80	0.00	N	Arm 3 Right	75.00
											Arm 9 Ahead	75.00
1/3 (Circ Sth)	U	A	2	3	17.4	Geom	-	3.80	0.00	Y	Arm 3 Right	75.00
2/1 (M1 N/B Off-slip)	U	B	2	3	16.9	Geom	-	4.00	0.00	Y	Arm 9 Left	80.00
											Arm 13 Left	60.00
2/2 (M1 N/B Off-slip)	U	B	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 3 Ahead	80.00
											Arm 9 Left	60.00
2/3 (M1 N/B Off-slip)	U	B	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 3 Ahead	80.00
3/1 (Circ W)	U	C	2	3	5.2	Geom	-	4.20	0.00	Y	Arm 10 Ahead	75.00
3/2 (Circ W)	U	C	2	3	5.2	Geom	-	4.20	0.00	N	Arm 5 Right	75.00
											Arm 10 Ahead	75.00
3/3 (Circ W)	U	C	2	3	8.0	Geom	-	4.20	0.00	Y	Arm 5 Right	75.00
4/1 (A511 E/B)	U	D	2	3	13.0	Geom	-	4.10	0.00	Y	Arm 10 Left	50.00
4/2 (A511 E/B)	U	D	2	3	60.0	Geom	-	4.10	0.00	N	Arm 5 Ahead	70.00
4/3 (A511 E/B)	U	D	2	3	60.0	Geom	-	4.10	0.00	Y	Arm 5 Ahead	70.00
5/1 (Circ Nth)	U	A	2	3	19.7	Geom	-	4.60	0.00	Y	Arm 11 Ahead	75.00
5/2 (Circ Nth)	U	A	2	3	19.7	Geom	-	4.60	0.00	Y	Arm 7 Right	75.00
											Arm 11 Ahead	75.00
6/1 (M1 S/B Off Slip)	U	B	2	3	15.0	Geom	-	4.50	0.00	Y	Arm 11 Left	80.00

Detailed Input Data And Results

6/2 (M1 S/B Off Slip)	U	B	2	3	60.0	Geom	-	4.50	0.00	Y	Arm 7 Ahead	80.00
											Arm 11 Left	80.00
6/3 (M1 S/B Off Slip)	U	B	2	3	60.0	Geom	-	4.50	0.00	Y	Arm 7 Ahead	80.00
7/1 (Circ E)	U	C	2	3	7.8	Geom	-	4.50	0.00	Y	Arm 12 Ahead	Inf
7/2 (Circ E)	U	C	2	3	12.2	Geom	-	4.50	0.00	N	Arm 1 Right	75.00
											Arm 12 Ahead	Inf
7/3 (Circ E)	U	C	2	3	8.0	Geom	-	4.50	0.00	Y	Arm 1 Right	75.00
8/1 (A50 W/B)	U	D	2	3	60.0	Geom	-	3.80	0.00	Y	Arm 1 Ahead	70.00
											Arm 12 Left	70.00
8/2 (A50 W/B)	U	D	2	3	13.2	Geom	-	3.80	0.00	N	Arm 1 Ahead	70.00
8/3 (A50 W/B)	U	D	2	3	21.7	Geom	-	3.80	0.00	Y	Arm 1 Ahead	70.00
9/1	U		2	3	60.0	Inf	-	-	-	-	-	-
9/2	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1 (M1 N/B On-slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
10/2 (M1 N/B On-slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1 (A50 EB Exit Pedestrian Crossing)	U	A	2	3	29.6	Geom	-	3.65	0.00	Y	Arm 15 Ahead	Inf
11/2 (A50 EB Exit Pedestrian Crossing)	U	A	2	3	29.6	Geom	-	3.65	0.00	Y	Arm 15 Ahead	Inf
12/1 (M1 S/B On-slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/2 (M1 S/B On-slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
13/1	U		2	3	60.0	Inf	-	-	-	-	-	-
14/1 (Cliffe Lane)	O		2	3	60.0	Geom	-	3.90	0.00	Y	Arm 3 Left	Inf
											Arm 9 Left	Inf
15/1	U		2	3	60.0	Inf	-	-	-	-	-	-
15/2	U		2	3	60.0	Inf	-	-	-	-	-	-

Detailed Input Data And Results

16/1 (A50 WB Entry Pedestrian Crossing)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 8 Ahead	Inf
16/2 (A50 WB Entry Pedestrian Crossing)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 8 Ahead	Inf

Give-Way Lane Input Data

Junction: M1 J22 / A50 / A511											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
14/1 (Cliffe Lane)	3/1 (Left)	1000	0	1/1	0.33	All	-	-	-	-	-
				1/2	0.33	All					
				1/3	0.33	All					
				2/1	0.33	All					
				2/2	0.33	All					
				2/3	0.33	All					
	3/2 (Left)	1000	0	1/1	0.33	All					
				1/2	0.33	All					
				1/3	0.33	All					
				2/1	0.33	All					
				2/2	0.33	All					
				2/3	0.33	All					
	9/1 (Left)	1000	0	1/1	0.33	All					
				1/2	0.33	All					
				1/3	0.33	All					
				2/1	0.33	All					
				2/2	0.33	All					
				2/3	0.33	All					

Detailed Input Data And Results

Lane Connector Input Data

Junction: M1 J22 / A50 / A511				
Org Lane	Dest Lane	Junction	Modelled Mean Cruise Time (s)	Platoon Dispersion
1/1	9/1	Internal	5	35
1/1	13/1	Internal	5	35
1/2	3/1	Internal	13	N/A
1/2	9/2	Internal	5	35
1/3	3/2	Internal	13	N/A
2/1	9/1	Internal	5	35
2/1	13/1	Internal	5	35
2/2	3/1	Internal	12	N/A
2/2	9/2	Internal	5	35
2/3	3/2	Internal	12	N/A
3/1	10/1	Internal	5	35
3/2	5/1	Internal	13	N/A
3/2	10/2	Internal	5	35
3/3	5/2	Internal	13	N/A
4/1	10/1	Internal	5	35
4/2	5/1	Internal	15	N/A
4/3	5/2	Internal	15	N/A
5/1	11/1	Internal	12	35
5/2	7/1	Internal	9	N/A
5/2	7/2	Internal	9	N/A
5/2	11/2	Internal	12	35
6/1	11/1	Internal	12	35
6/2	7/1	Internal	10	N/A
6/2	11/2	Internal	12	35
6/3	7/2	Internal	10	N/A
7/1	12/1	Internal	5	35
7/2	1/1	Internal	12	N/A
7/2	12/2	Internal	5	35
7/3	1/2	Internal	12	N/A
7/3	1/3	Internal	12	N/A
8/1	1/1	Internal	12	N/A
8/1	12/1	Internal	5	35
8/2	1/2	Internal	12	N/A
8/3	1/3	Internal	12	N/A
11/1	15/1	Internal	5	35
11/2	15/2	Internal	5	35
14/1	3/1	Internal	7	N/A

Detailed Input Data And Results

14/1	3/2	Internal	7	N/A
14/1	9/1	Internal	5	35
16/1	8/1	Internal	26	35
16/2	8/3	Internal	9	35

Scenario 1: '2028 Future Base + Proposed Development AM Peak' (FG1: '2028 Future Base + Proposed Development AM Peak', Plan 1: 'Network Control Plan 1')

Lane Saturation Flows

Junction: M1 J22 / A50 / A511								
Lane	Lane Width (m)	Gradient (%)	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Circ Sth)	3.80	0.00	Y	Arm 9 Ahead	Inf	87.1 %	1995	1995
				Arm 13 Ahead	Inf	12.9 %		
1/2 (Circ Sth)	3.80	0.00	N	Arm 3 Right	75.00	35.2 %	2093	2093
				Arm 9 Ahead	75.00	64.8 %		
1/3 (Circ Sth)	3.80	0.00	Y	Arm 3 Right	75.00	100.0 %	1956	1956
2/1 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 9 Left	80.00	93.6 %	1977	1977
				Arm 13 Left	60.00	6.4 %		
2/2 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	0.0 %	1966	1966
				Arm 9 Left	60.00	100.0 %		
2/3 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	100.0 %	1978	1978
3/1 (Circ W)	4.20	0.00	Y	Arm 10 Ahead	75.00	100.0 %	1995	1995
3/2 (Circ W)	4.20	0.00	N	Arm 5 Right	75.00	0.8 %	2132	2132
				Arm 10 Ahead	75.00	99.2 %		
3/3 (Circ W)	4.20	0.00	Y	Arm 5 Right	75.00	100.0 %	1995	1995
4/1 (A511 E/B)	4.10	0.00	Y	Arm 10 Left	50.00	100.0 %	1966	1966
4/2 (A511 E/B)	4.10	0.00	N	Arm 5 Ahead	70.00	100.0 %	2120	2120
4/3 (A511 E/B)	4.10	0.00	Y	Arm 5 Ahead	70.00	100.0 %	1983	1983
5/1 (Circ Nth)	4.60	0.00	Y	Arm 11 Ahead	75.00	100.0 %	2034	2034
5/2 (Circ Nth)	4.60	0.00	Y	Arm 7 Right	75.00	76.3 %	2034	2034
				Arm 11 Ahead	75.00	23.7 %		
6/1 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 11 Left	80.00	100.0 %	2027	2027
6/2 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	0.0 %	2027	2027
				Arm 11 Left	80.00	100.0 %		
6/3 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	100.0 %	2027	2027
7/1 (Circ E)	4.50	0.00	Y	Arm 12 Ahead	Inf	100.0 %	2065	2065
7/2	4.50	0.00	N	Arm 1 Right	75.00	39.8 %	2188	2188

Detailed Input Data And Results

(Circ E)				Arm 12 Ahead	Inf	60.2 %		
7/3 (Circ E)	4.50	0.00	Y	Arm 1 Right	75.00	100.0 %	2025	2025
8/1 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead Arm 12 Left	70.00 70.00	88.4 % 11.6 %	1953	1953
8/2 (A50 W/B)	3.80	0.00	N	Arm 1 Ahead	70.00	100.0 %	2090	2090
8/3 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	100.0 %	1953	1953
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
10/1 (M1 N/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M1 N/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1 (A50 EB Exit Pedestrian Crossing)	3.65	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1980	1980
11/2 (A50 EB Exit Pedestrian Crossing)	3.65	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1980	1980
12/1 (M1 S/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (M1 S/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Cliffe Lane)	3.90	0.00	Y	Arm 3 Left Arm 9 Left	Inf Inf	74.5 % 25.5 %	2005	2005
15/1	Infinite Saturation Flow						Inf	Inf
15/2	Infinite Saturation Flow						Inf	Inf
16/1 (A50 WB Entry Pedestrian Crossing)	3.65	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1980	1980
16/2 (A50 WB Entry Pedestrian Crossing)	3.65	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1980	1980

Bonus Green Times

No Bonus Greens are defined For Scenario 1

Scenario 2: '2028 Future Base + Proposed Development PM Peak' (FG2: '2028 Future Base + Proposed Development PM Peak', Plan 1: 'Network Control Plan 1')**Lane Saturation Flows**

Junction: M1 J22 / A50 / A511								
Lane	Lane Width (m)	Gradient (%)	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Circ Sth)	3.80	0.00	Y	Arm 9 Ahead	Inf	93.2 %	1995	1995
				Arm 13 Ahead	Inf	6.8 %		
1/2 (Circ Sth)	3.80	0.00	N	Arm 3 Right Arm 9 Ahead	75.00 75.00	12.1 % 87.9 %	2093	2093
1/3 (Circ Sth)	3.80	0.00	Y	Arm 3 Right	75.00	100.0 %	1956	1956
2/1 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 9 Left	80.00	96.0 %	1977	1977
				Arm 13 Left	60.00	4.0 %		
2/2 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	0.0 %	1966	1966
				Arm 9 Left	60.00	100.0 %		
2/3 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	100.0 %	1978	1978
3/1 (Circ W)	4.20	0.00	Y	Arm 10 Ahead	75.00	100.0 %	1995	1995
3/2 (Circ W)	4.20	0.00	N	Arm 5 Right	75.00	0.6 %	2132	2132
				Arm 10 Ahead	75.00	99.4 %		
3/3 (Circ W)	4.20	0.00	Y	Arm 5 Right	75.00	100.0 %	1995	1995
4/1 (A511 E/B)	4.10	0.00	Y	Arm 10 Left	50.00	100.0 %	1966	1966
4/2 (A511 E/B)	4.10	0.00	N	Arm 5 Ahead	70.00	100.0 %	2120	2120
4/3 (A511 E/B)	4.10	0.00	Y	Arm 5 Ahead	70.00	100.0 %	1983	1983
5/1 (Circ Nth)	4.60	0.00	Y	Arm 11 Ahead	75.00	100.0 %	2034	2034
5/2 (Circ Nth)	4.60	0.00	Y	Arm 7 Right	75.00	84.4 %	2034	2034
				Arm 11 Ahead	75.00	15.6 %		
6/1 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 11 Left	80.00	100.0 %	2027	2027
6/2 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	14.3 %	2027	2027
				Arm 11 Left	80.00	85.7 %		
6/3 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	100.0 %	2027	2027
7/1 (Circ E)	4.50	0.00	Y	Arm 12 Ahead	Inf	100.0 %	2065	2065

Detailed Input Data And Results

Detailed Input Data 7 and 8 Results	7/2 (Circ E)	4.50	0.00	N	Arm 1 Right	75.00	81.4 %	2170	2170
					Arm 12 Ahead	Inf	18.6 %		
	7/3 (Circ E)	4.50	0.00	Y	Arm 1 Right	75.00	100.0 %	2025	2025
	8/1 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	92.4 %	1953	1953
					Arm 12 Left	70.00	7.6 %		
	8/2 (A50 W/B)	3.80	0.00	N	Arm 1 Ahead	70.00	100.0 %	2090	2090
	8/3 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	100.0 %	1953	1953
	9/1	Infinite Saturation Flow						Inf	Inf
	9/2	Infinite Saturation Flow						Inf	Inf
	10/1 (M1 N/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
	10/2 (M1 N/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
	11/1 (A50 EB Exit Pedestrian Crossing)	3.65	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1980	1980
	11/2 (A50 EB Exit Pedestrian Crossing)	3.65	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1980	1980
	12/1 (M1 S/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
	12/2 (M1 S/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
	13/1	Infinite Saturation Flow						Inf	Inf
	14/1 (Cliffe Lane)	3.90	0.00	Y	Arm 3 Left Arm 9 Left	Inf Inf	85.4 % 14.6 %	2005	2005
	15/1	Infinite Saturation Flow						Inf	Inf
	15/2	Infinite Saturation Flow						Inf	Inf
	16/1 (A50 WB Entry Pedestrian Crossing)	3.65	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1980	1980
	16/2 (A50 WB Entry Pedestrian Crossing)	3.65	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1980	1980

Bonus Green Times

No Bonus Greens are defined For Scenario 2

Scenario 3: '2030 Future Base + Proposed Development AM Peak' (FG3: '2030 Future Base + Proposed Development AM Peak', Plan 1: 'Network Control Plan 1')**Lane Saturation Flows**

Junction: M1 J22 / A50 / A511								
Lane	Lane Width (m)	Gradient (%)	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Circ Sth)	3.80	0.00	Y	Arm 9 Ahead	Inf	87.0 %	1995	1995
				Arm 13 Ahead	Inf	13.0 %		
1/2 (Circ Sth)	3.80	0.00	N	Arm 3 Right Arm 9 Ahead	75.00 75.00	36.9 % 63.1 %	2093	2093
1/3 (Circ Sth)	3.80	0.00	Y	Arm 3 Right	75.00	100.0 %	1956	1956
2/1 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 9 Left	80.00	93.4 %	1977	1977
				Arm 13 Left	60.00	6.6 %		
2/2 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	0.0 %	1966	1966
				Arm 9 Left	60.00	100.0 %		
2/3 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	100.0 %	1978	1978
3/1 (Circ W)	4.20	0.00	Y	Arm 10 Ahead	75.00	100.0 %	1995	1995
3/2 (Circ W)	4.20	0.00	N	Arm 5 Right	75.00	1.7 %	2132	2132
				Arm 10 Ahead	75.00	98.3 %		
3/3 (Circ W)	4.20	0.00	Y	Arm 5 Right	75.00	100.0 %	1995	1995
4/1 (A511 E/B)	4.10	0.00	Y	Arm 10 Left	50.00	100.0 %	1966	1966
4/2 (A511 E/B)	4.10	0.00	N	Arm 5 Ahead	70.00	100.0 %	2120	2120
4/3 (A511 E/B)	4.10	0.00	Y	Arm 5 Ahead	70.00	100.0 %	1983	1983
5/1 (Circ Nth)	4.60	0.00	Y	Arm 11 Ahead	75.00	100.0 %	2034	2034
5/2 (Circ Nth)	4.60	0.00	Y	Arm 7 Right	75.00	77.5 %	2034	2034
				Arm 11 Ahead	75.00	22.5 %		
6/1 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 11 Left	80.00	100.0 %	2027	2027
6/2 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	0.0 %	2027	2027
				Arm 11 Left	80.00	100.0 %		
6/3 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	100.0 %	2027	2027
7/1 (Circ E)	4.50	0.00	Y	Arm 12 Ahead	Inf	100.0 %	2065	2065

Detailed Input Data And Results

7/2 (Circ E)	4.50	0.00	N	Arm 1 Right	75.00	39.6 %	2188	2188
				Arm 12 Ahead	Inf	60.4 %		
7/3 (Circ E)	4.50	0.00	Y	Arm 1 Right	75.00	100.0 %	2025	2025
8/1 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	88.4 %	1953	1953
				Arm 12 Left	70.00	11.6 %		
8/2 (A50 W/B)	3.80	0.00	N	Arm 1 Ahead	70.00	100.0 %	2090	2090
8/3 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	100.0 %	1953	1953
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
10/1 (M1 N/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M1 N/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1 (A50 EB Exit Pedestrian Crossing)	3.65	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1980	1980
11/2 (A50 EB Exit Pedestrian Crossing)	3.65	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1980	1980
12/1 (M1 S/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (M1 S/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Cliffe Lane)	3.90	0.00	Y	Arm 3 Left Arm 9 Left	Inf Inf	75.5 % 24.5 %	2005	2005
15/1	Infinite Saturation Flow						Inf	Inf
15/2	Infinite Saturation Flow						Inf	Inf
16/1 (A50 WB Entry Pedestrian Crossing)	3.65	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1980	1980
16/2 (A50 WB Entry Pedestrian Crossing)	3.65	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1980	1980

Bonus Green Times

No Bonus Greens are defined For Scenario 3

Scenario 4: '2030 Future Base + Proposed Development PM Peak' (FG4: '2030 Future Base + Proposed Development PM Peak', Plan 1: 'Network Control Plan 1')**Lane Saturation Flows**

Junction: M1 J22 / A50 / A511								
Lane	Lane Width (m)	Gradient (%)	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Circ Sth)	3.80	0.00	Y	Arm 9 Ahead	Inf	92.3 %	1995	1995
				Arm 13 Ahead	Inf	7.7 %		
1/2 (Circ Sth)	3.80	0.00	N	Arm 3 Right Arm 9 Ahead	75.00 75.00	13.7 % 86.3 %	2093	2093
1/3 (Circ Sth)	3.80	0.00	Y	Arm 3 Right	75.00	100.0 %	1956	1956
2/1 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 9 Left	80.00	95.4 %	1977	1977
				Arm 13 Left	60.00	4.6 %		
2/2 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	0.0 %	1966	1966
				Arm 9 Left	60.00	100.0 %		
2/3 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	100.0 %	1978	1978
3/1 (Circ W)	4.20	0.00	Y	Arm 10 Ahead	75.00	100.0 %	1995	1995
3/2 (Circ W)	4.20	0.00	N	Arm 5 Right	75.00	0.4 %	2132	2132
				Arm 10 Ahead	75.00	99.6 %		
3/3 (Circ W)	4.20	0.00	Y	Arm 5 Right	75.00	100.0 %	1995	1995
4/1 (A511 E/B)	4.10	0.00	Y	Arm 10 Left	50.00	100.0 %	1966	1966
4/2 (A511 E/B)	4.10	0.00	N	Arm 5 Ahead	70.00	100.0 %	2120	2120
4/3 (A511 E/B)	4.10	0.00	Y	Arm 5 Ahead	70.00	100.0 %	1983	1983
5/1 (Circ Nth)	4.60	0.00	Y	Arm 11 Ahead	75.00	100.0 %	2034	2034
5/2 (Circ Nth)	4.60	0.00	Y	Arm 7 Right	75.00	86.7 %	2034	2034
				Arm 11 Ahead	75.00	13.3 %		
6/1 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 11 Left	80.00	100.0 %	2027	2027
6/2 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	16.8 %	2027	2027
				Arm 11 Left	80.00	83.2 %		
6/3 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	100.0 %	2027	2027
7/1 (Circ E)	4.50	0.00	Y	Arm 12 Ahead	Inf	100.0 %	2065	2065

Detailed Input Data And Results

7/2 (Circ E)	4.50	0.00	N	Arm 1 Right	75.00	86.3 %	2168	2168
				Arm 12 Ahead	Inf	13.7 %		
7/3 (Circ E)	4.50	0.00	Y	Arm 1 Right	75.00	100.0 %	2025	2025
8/1 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	91.9 %	1953	1953
				Arm 12 Left	70.00	8.1 %		
8/2 (A50 W/B)	3.80	0.00	N	Arm 1 Ahead	70.00	100.0 %	2090	2090
8/3 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	100.0 %	1953	1953
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
10/1 (M1 N/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M1 N/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1 (A50 EB Exit Pedestrian Crossing)	3.65	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1980	1980
11/2 (A50 EB Exit Pedestrian Crossing)	3.65	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1980	1980
12/1 (M1 S/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (M1 S/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Cliffe Lane)	3.90	0.00	Y	Arm 3 Left Arm 9 Left	Inf Inf	85.8 % 14.2 %	2005	2005
15/1	Infinite Saturation Flow						Inf	Inf
15/2	Infinite Saturation Flow						Inf	Inf
16/1 (A50 WB Entry Pedestrian Crossing)	3.65	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1980	1980
16/2 (A50 WB Entry Pedestrian Crossing)	3.65	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1980	1980

Bonus Green Times

No Bonus Greens are defined For Scenario 4

Scenario 5: '2036 Future Base + Proposed Development AM Peak' (FG5: '2036 Future Base + Proposed Development AM Peak', Plan 1: 'Network Control Plan 1')**Lane Saturation Flows**

Junction: M1 J22 / A50 / A511								
Lane	Lane Width (m)	Gradient (%)	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Circ Sth)	3.80	0.00	Y	Arm 9 Ahead	Inf	84.2 %	1995	1995
				Arm 13 Ahead	Inf	15.8 %		
1/2 (Circ Sth)	3.80	0.00	N	Arm 3 Right Arm 9 Ahead	75.00 75.00	41.7 % 58.3 %	2093	2093
1/3 (Circ Sth)	3.80	0.00	Y	Arm 3 Right	75.00	100.0 %	1956	1956
2/1 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 9 Left	80.00	92.5 %	1977	1977
				Arm 13 Left	60.00	7.5 %		
2/2 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	0.0 %	1966	1966
				Arm 9 Left	60.00	100.0 %		
2/3 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	100.0 %	1978	1978
3/1 (Circ W)	4.20	0.00	Y	Arm 10 Ahead	75.00	100.0 %	1995	1995
3/2 (Circ W)	4.20	0.00	N	Arm 5 Right	75.00	0.9 %	2132	2132
				Arm 10 Ahead	75.00	99.1 %		
3/3 (Circ W)	4.20	0.00	Y	Arm 5 Right	75.00	100.0 %	1995	1995
4/1 (A511 E/B)	4.10	0.00	Y	Arm 10 Left	50.00	100.0 %	1966	1966
4/2 (A511 E/B)	4.10	0.00	N	Arm 5 Ahead	70.00	100.0 %	2120	2120
4/3 (A511 E/B)	4.10	0.00	Y	Arm 5 Ahead	70.00	100.0 %	1983	1983
5/1 (Circ Nth)	4.60	0.00	Y	Arm 11 Ahead	75.00	100.0 %	2034	2034
5/2 (Circ Nth)	4.60	0.00	Y	Arm 7 Right	75.00	78.9 %	2034	2034
				Arm 11 Ahead	75.00	21.1 %		
6/1 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 11 Left	80.00	100.0 %	2027	2027
6/2 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	0.0 %	2027	2027
				Arm 11 Left	80.00	100.0 %		
6/3 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	100.0 %	2027	2027
7/1 (Circ E)	4.50	0.00	Y	Arm 12 Ahead	Inf	100.0 %	2065	2065

Detailed Input Data And Results

7/2 (Circ E)	4.50	0.00	N	Arm 1 Right	75.00	38.5 %	2188	2188
				Arm 12 Ahead	Inf	61.5 %		
7/3 (Circ E)	4.50	0.00	Y	Arm 1 Right	75.00	100.0 %	2025	2025
8/1 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	88.5 %	1953	1953
				Arm 12 Left	70.00	11.5 %		
8/2 (A50 W/B)	3.80	0.00	N	Arm 1 Ahead	70.00	100.0 %	2090	2090
8/3 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	100.0 %	1953	1953
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
10/1 (M1 N/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M1 N/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1 (A50 EB Exit Pedestrian Crossing)	3.65	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1980	1980
11/2 (A50 EB Exit Pedestrian Crossing)	3.65	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1980	1980
12/1 (M1 S/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (M1 S/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Cliffe Lane)	3.90	0.00	Y	Arm 3 Left	Inf	76.5 %	2005	2005
				Arm 9 Left	Inf	23.5 %		
15/1	Infinite Saturation Flow						Inf	Inf
15/2	Infinite Saturation Flow						Inf	Inf
16/1 (A50 WB Entry Pedestrian Crossing)	3.65	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1980	1980
16/2 (A50 WB Entry Pedestrian Crossing)	3.65	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1980	1980

Bonus Green Times

No Bonus Greens are defined For Scenario 5

Scenario 6: '2036 Future Base + Proposed Development PM Peak' (FG6: '2036 Future Base + Proposed Development PM Peak', Plan 1: 'Network Control Plan 1')**Lane Saturation Flows**

Junction: M1 J22 / A50 / A511								
Lane	Lane Width (m)	Gradient (%)	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Circ Sth)	3.80	0.00	Y	Arm 9 Ahead	Inf	89.1 %	1995	1995
				Arm 13 Ahead	Inf	10.9 %		
1/2 (Circ Sth)	3.80	0.00	N	Arm 3 Right Arm 9 Ahead	75.00 75.00	16.9 % 83.1 %	2093	2093
1/3 (Circ Sth)	3.80	0.00	Y	Arm 3 Right	75.00	100.0 %	1956	1956
2/1 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 9 Left	80.00	93.4 %	1977	1977
				Arm 13 Left	60.00	6.6 %		
2/2 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	0.0 %	1966	1966
				Arm 9 Left	60.00	100.0 %		
2/3 (M1 N/B Off-slip)	4.00	0.00	Y	Arm 3 Ahead	80.00	100.0 %	1978	1978
3/1 (Circ W)	4.20	0.00	Y	Arm 10 Ahead	75.00	100.0 %	1995	1995
3/2 (Circ W)	4.20	0.00	N	Arm 5 Right	75.00	0.6 %	2132	2132
				Arm 10 Ahead	75.00	99.4 %		
3/3 (Circ W)	4.20	0.00	Y	Arm 5 Right	75.00	100.0 %	1995	1995
4/1 (A511 E/B)	4.10	0.00	Y	Arm 10 Left	50.00	100.0 %	1966	1966
4/2 (A511 E/B)	4.10	0.00	N	Arm 5 Ahead	70.00	100.0 %	2120	2120
4/3 (A511 E/B)	4.10	0.00	Y	Arm 5 Ahead	70.00	100.0 %	1983	1983
5/1 (Circ Nth)	4.60	0.00	Y	Arm 11 Ahead	75.00	100.0 %	2034	2034
5/2 (Circ Nth)	4.60	0.00	Y	Arm 7 Right	75.00	88.2 %	2034	2034
				Arm 11 Ahead	75.00	11.8 %		
6/1 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 11 Left	80.00	100.0 %	2027	2027
6/2 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	10.6 %	2027	2027
				Arm 11 Left	80.00	89.4 %		
6/3 (M1 S/B Off Slip)	4.50	0.00	Y	Arm 7 Ahead	80.00	100.0 %	2027	2027
7/1 (Circ E)	4.50	0.00	Y	Arm 12 Ahead	Inf	100.0 %	2065	2065

Detailed Input Data And Results

7/2 (Circ E)	4.50	0.00	N	Arm 1 Right	75.00	57.1 %	2180	2180
				Arm 12 Ahead	Inf	42.9 %		
7/3 (Circ E)	4.50	0.00	Y	Arm 1 Right	75.00	100.0 %	2025	2025
8/1 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	92.1 %	1953	1953
				Arm 12 Left	70.00	7.9 %		
8/2 (A50 W/B)	3.80	0.00	N	Arm 1 Ahead	70.00	100.0 %	2090	2090
8/3 (A50 W/B)	3.80	0.00	Y	Arm 1 Ahead	70.00	100.0 %	1953	1953
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
10/1 (M1 N/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M1 N/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1 (A50 EB Exit Pedestrian Crossing)	3.65	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1980	1980
11/2 (A50 EB Exit Pedestrian Crossing)	3.65	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1980	1980
12/1 (M1 S/B On-slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (M1 S/B On-slip Lane 2)	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Cliffe Lane)	3.90	0.00	Y	Arm 3 Left Arm 9 Left	Inf Inf	86.4 % 13.6 %	2005	2005
15/1	Infinite Saturation Flow						Inf	Inf
15/2	Infinite Saturation Flow						Inf	Inf
16/1 (A50 WB Entry Pedestrian Crossing)	3.65	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1980	1980
16/2 (A50 WB Entry Pedestrian Crossing)	3.65	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1980	1980

Bonus Green Times

No Bonus Greens are defined For Scenario 6

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2028 Future Base + Proposed Development AM Peak'	08:00	09:00	01:00	
2: '2028 Future Base + Proposed Development PM Peak'	17:00	18:00	01:00	
3: '2030 Future Base + Proposed Development AM Peak'	08:00	09:00	01:00	
4: '2030 Future Base + Proposed Development PM Peak'	17:00	18:00	01:00	
5: '2036 Future Base + Proposed Development AM Peak'	08:00	09:00	01:00	
6: '2036 Future Base + Proposed Development PM Peak'	17:00	18:00	01:00	

Traffic Flows, Desired**FG1: '2028 Future Base + Proposed Development AM Peak'****Desired Flow :**

	Destination						
		A	B	C	D	E	Tot.
Origin	A	1	1188	129	99	297	1714
	B	1066	6	83	14	1076	2245
	C	2	39	0	27	816	884
	D	90	14	8	2	39	153
	E	300	918	591	0	5	1814
	Tot.	1459	2165	811	142	2233	6810

FG2: '2028 Future Base + Proposed Development PM Peak'**Desired Flow :**

	Destination						
		A	B	C	D	E	Tot.
Origin	A	1	968	108	43	417	1537
	B	781	6	52	15	1200	2054
	C	0	30	3	18	886	937
	D	87	15	9	0	19	130
	E	320	724	530	1	9	1584
	Tot.	1189	1743	702	77	2531	6242

Detailed Input Data And Results

FG3: '2030 Future Base + Proposed Development AM Peak' Desired Flow :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	1	1214	137	102	300	1754
	B	1108	6	85	14	1084	2297
	C	2	42	0	28	815	887
	D	92	14	9	2	38	155
	E	307	915	596	0	5	1823
	Tot.	1510	2191	827	146	2242	6916

FG4: '2030 Future Base + Proposed Development PM Peak' Desired Flow :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	1	997	116	51	426	1591
	B	820	6	56	17	1220	2119
	C	0	30	4	21	887	942
	D	99	17	11	0	21	148
	E	317	700	540	1	9	1567
	Tot.	1237	1750	727	90	2563	6367

FG5: '2036 Future Base + Proposed Development AM Peak' Desired Flow :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	1	1291	156	132	326	1906
	B	1196	6	90	17	1078	2387
	C	2	41	0	32	814	889
	D	91	13	8	2	35	149
	E	335	903	613	0	5	1856
	Tot.	1625	2254	867	183	2258	7187

FG6: '2036 Future Base + Proposed Development PM Peak' Desired Flow :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	2	1069	128	80	472	1751
	B	877	6	55	24	1205	2167
	C	0	29	4	30	882	945
	D	123	18	12	0	24	177
	E	348	685	541	1	9	1584
	Tot.	1350	1807	740	135	2592	6624

Detailed Input Data And Results

Scenario 1: '2028 Future Base + Proposed Development AM Peak' (FG1: '2028 Future Base + Proposed Development AM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	1	1188	129	99	297	1714
	B	1066	6	83	14	1076	2245
	C	2	39	0	27	816	884
	D	90	14	8	2	39	153
	E	300	918	591	0	5	1814
	Tot.	1459	2165	811	142	2233	6810

Traffic Flows, Difference

Difference :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	0	0	0	0	0	0
	B	0	0	0	0	0	0
	C	0	0	0	0	0	0
	D	0	0	0	0	0	0
	E	0	0	0	0	0	0
	Tot.	0	0	0	0	0	0

Scenario 2: '2028 Future Base + Proposed Development PM Peak' (FG2: '2028 Future Base + Proposed Development PM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	1	968	108	43	417	1537
	B	781	6	52	15	1200	2054
	C	0	30	3	18	886	937
	D	87	15	9	0	19	130
	E	320	724	530	1	9	1584
	Tot.	1189	1743	702	77	2531	6242

Traffic Flows, Difference**Difference :**

	Destination						
		A	B	C	D	E	Tot.
Origin	A	0	0	0	0	0	0
	B	0	0	0	0	0	0
	C	0	0	0	0	0	0
	D	0	0	0	0	0	0
	E	0	0	0	0	0	0
	Tot.	0	0	0	0	0	0

Scenario 3: '2030 Future Base + Proposed Development AM Peak' (FG3: '2030 Future Base + Proposed Development AM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Actual**Actual Flow :**

	Destination						
		A	B	C	D	E	Tot.
Origin	A	1	1214	137	102	300	1754
	B	1108	6	85	14	1084	2297
	C	2	42	0	28	815	887
	D	92	14	9	2	38	155
	E	307	915	596	0	5	1823
	Tot.	1510	2191	827	146	2242	6916

Traffic Flows, Difference**Difference :**

	Destination						
		A	B	C	D	E	Tot.
Origin	A	0	0	0	0	0	0
	B	0	0	0	0	0	0
	C	0	0	0	0	0	0
	D	0	0	0	0	0	0
	E	0	0	0	0	0	0
	Tot.	0	0	0	0	0	0

Detailed Input Data And Results

Scenario 4: '2030 Future Base + Proposed Development PM Peak' (FG4: '2030 Future Base + Proposed Development PM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	1	997	116	51	426	1591
	B	820	6	56	17	1220	2119
	C	0	30	4	21	887	942
	D	99	17	11	0	21	148
	E	317	700	540	1	9	1567
	Tot.	1237	1750	727	90	2563	6367

Traffic Flows, Difference

Difference :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	0	0	0	0	0	0
	B	0	0	0	0	0	0
	C	0	0	0	0	0	0
	D	0	0	0	0	0	0
	E	0	0	0	0	0	0
	Tot.	0	0	0	0	0	0

Scenario 5: '2036 Future Base + Proposed Development AM Peak' (FG5: '2036 Future Base + Proposed Development AM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	1	1291	156	132	326	1906
	B	1196	6	90	17	1078	2387
	C	2	41	0	32	814	889
	D	91	13	8	2	35	149
	E	335	903	613	0	5	1856
	Tot.	1625	2254	867	183	2258	7187

Traffic Flows, Difference**Difference :**

	Destination						
		A	B	C	D	E	Tot.
Origin	A	0	0	0	0	0	0
	B	0	0	0	0	0	0
	C	0	0	0	0	0	0
	D	0	0	0	0	0	0
	E	0	0	0	0	0	0
	Tot.	0	0	0	0	0	0

Scenario 6: '2036 Future Base + Proposed Development PM Peak' (FG6: '2036 Future Base + Proposed Development PM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Actual**Actual Flow :**

	Destination						
		A	B	C	D	E	Tot.
Origin	A	2	1069	128	80	472	1751
	B	877	6	55	24	1205	2167
	C	0	29	4	30	882	945
	D	123	18	12	0	24	177
	E	348	685	541	1	9	1584
	Tot.	1350	1807	740	135	2592	6624

Traffic Flows, Difference**Difference :**

	Destination						
		A	B	C	D	E	Tot.
Origin	A	0	0	0	0	0	0
	B	0	0	0	0	0	0
	C	0	0	0	0	0	0
	D	0	0	0	0	0	0
	E	0	0	0	0	0	0
	Tot.	0	0	0	0	0	0

Traffic Lane Flows

Lane	Scenario 1: 2028 Future Base + Proposed Development AM Peak	Scenario 2: 2028 Future Base + Proposed Development PM Peak	Scenario 3: 2030 Future Base + Proposed Development AM Peak	Scenario 4: 2030 Future Base + Proposed Development PM Peak	Scenario 5: 2036 Future Base + Proposed Development AM Peak	Scenario 6: 2036 Future Base + Proposed Development PM Peak
Junction: M1 J22 / A50 / A511						
1/1	890	865	909	897	957	963
1/2	930	933	948	958	1034	996
1/3	746	675	765	696	772	717
2/1 (short)	423	453	423	455	424	457
2/2 (with short)	843(In) 420(Out)	904(In) 451(Out)	843(In) 420(Out)	908(In) 453(Out)	846(In) 422(Out)	912(In) 455(Out)
2/3	41	33	44	34	43	33
3/1	414	200	437	227	508	285
3/2 (with short)	814(In) 751(Out)	732(In) 673(Out)	839(In) 779(Out)	761(In) 696(Out)	852(In) 789(Out)	786(In) 721(Out)
3/3 (short)	63	59	60	65	63	65
4/1 (short)	300	320	307	317	335	348
4/2 (with short)	1083(In) 783(Out)	989(In) 669(Out)	1093(In) 786(Out)	980(In) 663(Out)	1123(In) 788(Out)	1006(In) 658(Out)
4/3	731	595	730	587	733	578
5/1	789	673	799	666	795	662
5/2	794	654	790	652	796	643
6/1 (short)	501	435	503	457	540	476
6/2 (with short)	1188(In) 687(Out)	1057(In) 622(Out)	1214(In) 711(Out)	1106(In) 649(Out)	1291(In) 751(Out)	1139(In) 663(Out)
6/3	526	480	540	485	615	612
7/1	339	596	339	630	357	440
7/2 (with short)	793(In) 646(Out)	525(In) 291(Out)	813(In) 667(Out)	529(In) 299(Out)	886(In) 683(Out)	809(In) 571(Out)
7/3 (short)	147	234	146	230	203	238
8/1 (with short)	1500(In) 716(Out)	1380(In) 680(Out)	1533(In) 730(Out)	1424(In) 695(Out)	1616(In) 784(Out)	1452(In) 692(Out)
8/2 (short)	784	700	803	729	832	760
8/3	745	674	764	695	771	715
9/1	1210	1260	1224	1283	1233	1309
9/2	1023	1271	1018	1280	1025	1283
10/1	714	520	744	544	843	633
10/2	745	669	766	693	782	717
11/1	1290	1108	1302	1123	1335	1138
11/2	875	635	889	627	919	669
12/1	422	648	424	686	447	495

Detailed Input Data And Results

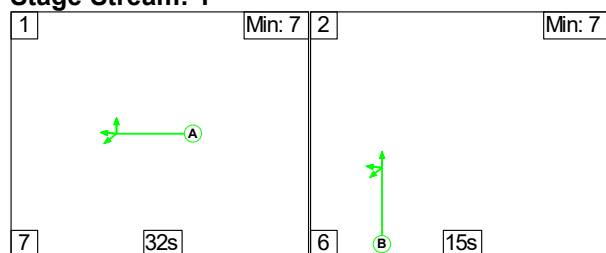
12/2	389	54	403	41	420	245
13/1	142	77	146	90	183	135
14/1	153	130	155	148	149	177
15/1	1290	1108	1302	1123	1335	1138
15/2	875	635	889	627	919	669
16/1	1500	1380	1533	1424	1616	1452
16/2	745	674	764	695	771	715

Scenario 1: '2028 Future Base + Proposed Development AM Peak' (FG1: '2028 Future Base + Proposed Development AM Peak', Plan 1: 'Network Control Plan 1')

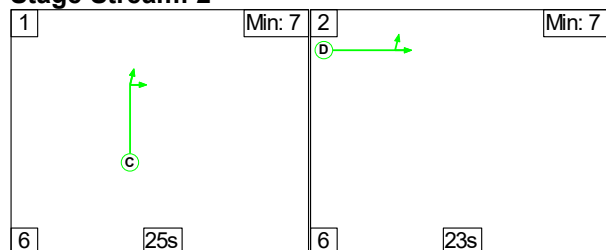
Controller :C1 - M1/J22 A50/A511 Controller 1

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

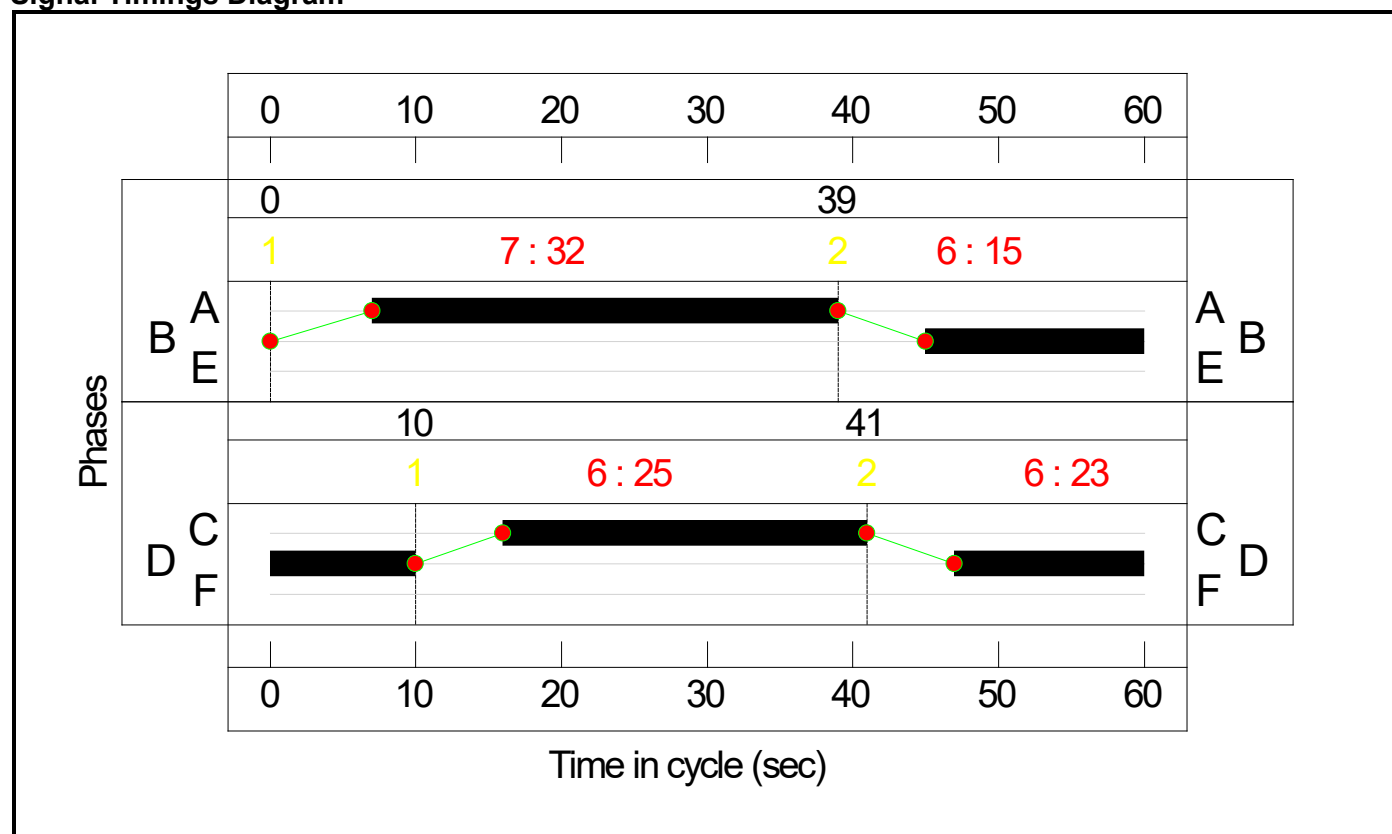
Stage	1	2
Duration	32	15
Change Point	0	39

Stage Stream: 2

Stage	1	2
Duration	25	23
Change Point	10	41

Phase Timings

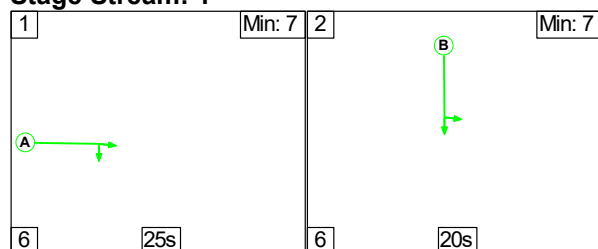
Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Sth Right Ahead Ahead2	Traffic	1	32	7	39
B	M1 N/B Off-slip Ahead Left Left2	Traffic	1	15	45	0
C	Circ W Right Ahead	Traffic	2	25	16	41
D	A511 E/B Ahead Left	Traffic	2	23	47	10
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

Signal Timings Diagram

Controller :C2 - M1/J22 A50/A511 Controller 2

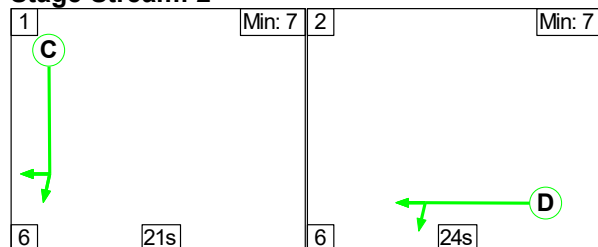
Stage Sequence Diagram

Stage Stream: 1



Detailed Input Data And Results

Stage Stream: 2



Stage Timings

Stage Stream: 1

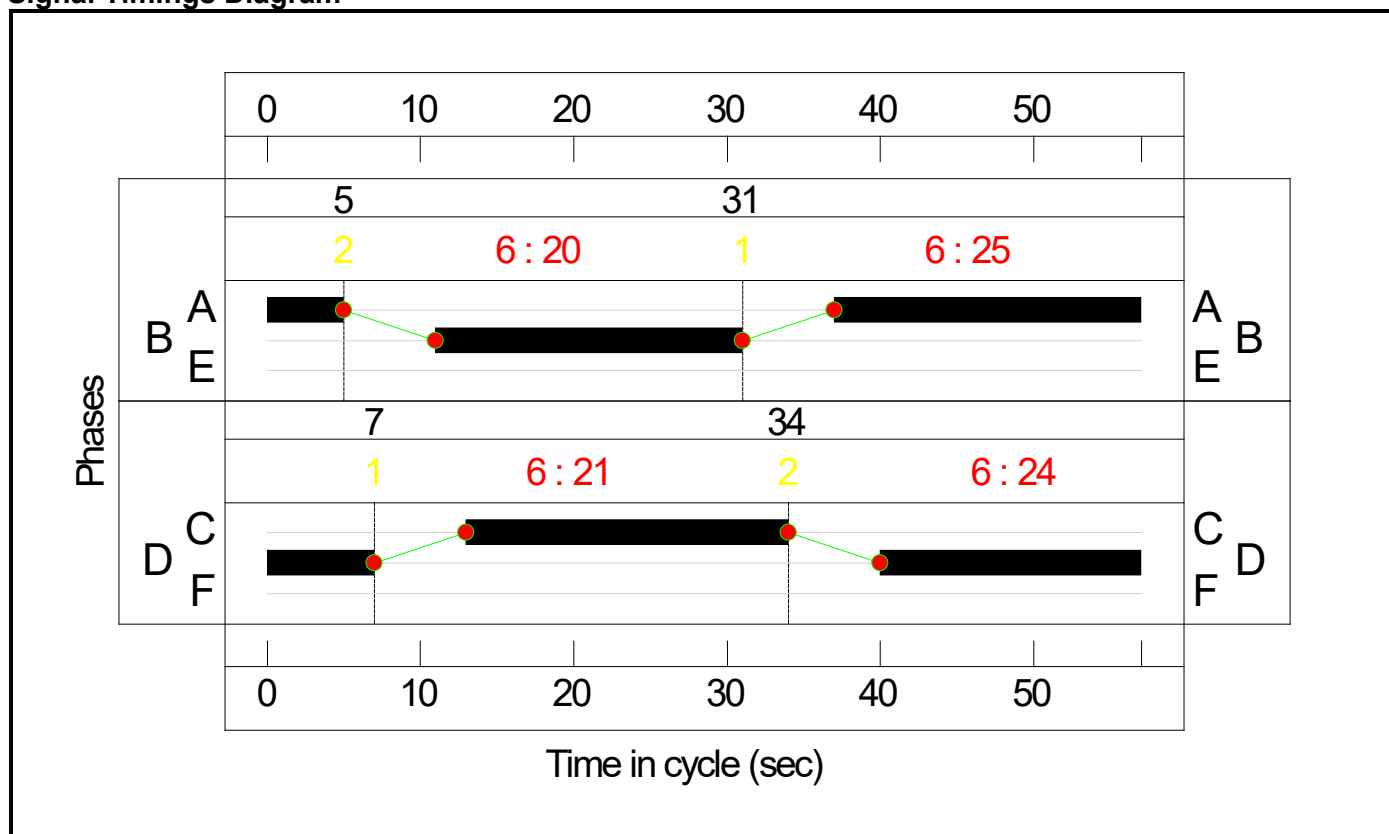
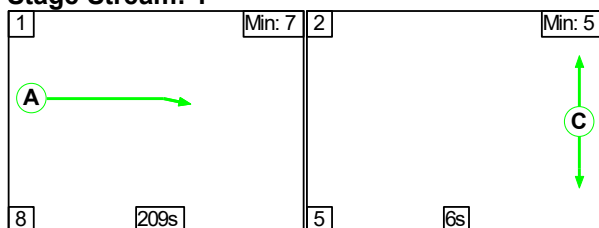
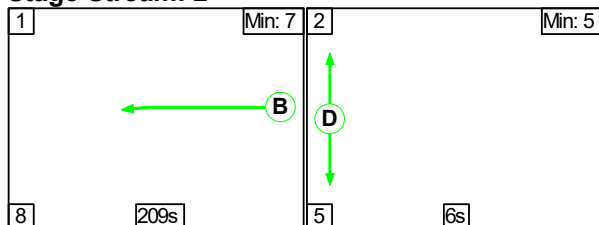
Stage	1	2
Duration	25	20
Change Point	31	5

Stage Stream: 2

Stage	1	2
Duration	21	24
Change Point	7	34

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Nth Right Ahead	Traffic	1	25	37	5
B	M1 S/B Off Slip Ahead Left	Traffic	1	20	11	31
C	Circ E Right Ahead	Traffic	2	21	13	34
D	A50 W/B Ahead Left	Traffic	2	24	40	7
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

Signal Timings Diagram**Controller :C3 - A50 East Pedestrian Crossings****Stage Sequence Diagram****Stage Stream: 1****Stage Stream: 2****Stage Timings****Stage Stream: 1**

Stage	1	2
Duration	209	6
Change Point	205	194

Detailed Input Data And Results

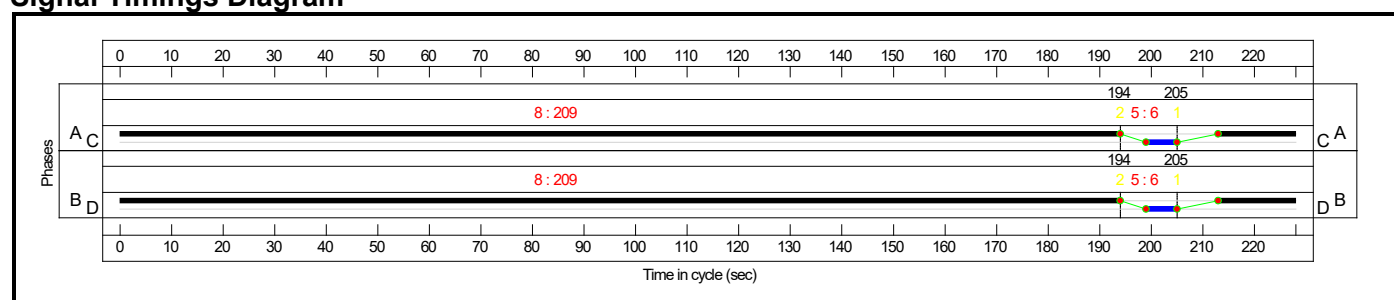
Stage Stream: 2

Stage	1	2
Duration	209	6
Change Point	205	194

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	A50 EB Exit Pedestrian Crossing Ahead	Traffic	1	209	213	194
B	A50 WB Entry Pedestrian Crossing Ahead	Traffic	2	209	213	194
C	Pedestrians across	Pedestrian	1	6	199	205
D	Pedestrians across	Pedestrian	2	6	199	205

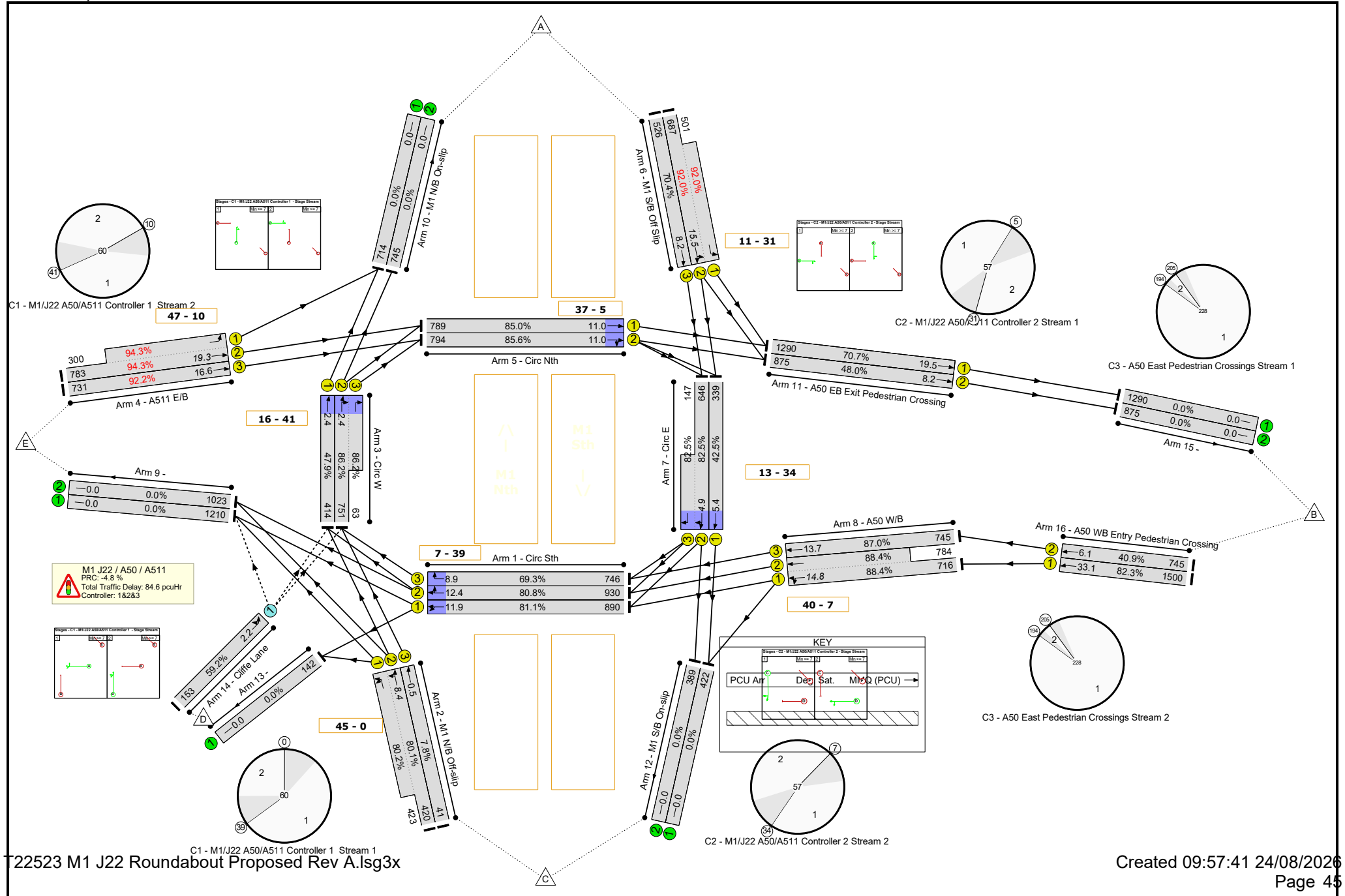
Signal Timings Diagram



Lane Green Times

Junction: M1 J22 / A50 / A511					
Lane	Description	Type	Phases	Start Green	End Green
1/1	Circ Sth Ahead Ahead2	U	A	7	39
1/2	Circ Sth Right Ahead	U	A	7	39
1/3	Circ Sth Right	U	A	7	39
2/1	M1 N/B Off-slip Left Left2	U	B	45	0
2/2	M1 N/B Off-slip Ahead Left	U	B	45	0
2/3	M1 N/B Off-slip Ahead	U	B	45	0
3/1	Circ W Ahead	U	C	16	41
3/2	Circ W Right Ahead	U	C	16	41
3/3	Circ W Right	U	C	16	41
4/1	A511 E/B Left	U	D	47	10
4/2	A511 E/B Ahead	U	D	47	10
4/3	A511 E/B Ahead	U	D	47	10
5/1	Circ Nth Ahead	U	A	37	5
5/2	Circ Nth Right Ahead	U	A	37	5
6/1	M1 S/B Off Slip Left	U	B	11	31
6/2	M1 S/B Off Slip Ahead Left	U	B	11	31
6/3	M1 S/B Off Slip Ahead	U	B	11	31
7/1	Circ E Ahead	U	C	13	34
7/2	Circ E Right Ahead	U	C	13	34
7/3	Circ E Right	U	C	13	34
8/1	A50 W/B Ahead Left	U	D	40	7
8/2	A50 W/B Ahead	U	D	40	7
8/3	A50 W/B Ahead	U	D	40	7
11/1	A50 EB Exit Pedestrian Crossing Ahead	U	A	213	194
11/2	A50 EB Exit Pedestrian Crossing Ahead	U	A	213	194
16/1	A50 WB Entry Pedestrian Crossing Ahead	U	B	213	194
16/2	A50 WB Entry Pedestrian Crossing Ahead	U	B	213	194

Detailed Input Data And Results



Detailed Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Bonus Green	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	-	94.3%
M1 J22 / A50 / A511	-	-	N/A	-	-		-	-	-	-	-	-	-	94.3%
1/1	Circ Sth Ahead Ahead2	U	1:1	N/A	C1:A		1	32	-	-	890	1995	1097	81.1%
1/2	Circ Sth Right Ahead	U	1:1	N/A	C1:A		1	32	-	-	930	2093	1151	80.8%
1/3	Circ Sth Right	U	1:1	N/A	C1:A		1	32	-	-	746	1956	1076	69.3%
2/2+2/1	M1 N/B Off-slip Ahead Left Left2	U	1:1	N/A	C1:B		1	15	-	-	843	1966:1977	524+527	80.1 : 80.2%
2/3	M1 N/B Off-slip Ahead	U	1:1	N/A	C1:B		1	15	-	-	41	1978	527	7.8%
3/1	Circ W Ahead	U	1:2	N/A	C1:C		1	25	-	-	414	1995	865	47.9%
3/2+3/3	Circ W Right Ahead	U	1:2	N/A	C1:C		1	25	-	-	814	2132:1995	871+73	86.2 : 86.2%
4/2+4/1	A511 E/B Ahead Left	U	1:2	N/A	C1:D		1	23	-	-	1083	2120:1966	830+318	94.3 : 94.3%
4/3	A511 E/B Ahead	U	1:2	N/A	C1:D		1	23	-	-	731	1983	793	92.2%
5/1	Circ Nth Ahead	U	2:1	N/A	C2:A		1	25	-	-	789	2034	928	85.0%
5/2	Circ Nth Right Ahead	U	2:1	N/A	C2:A		1	25	-	-	794	2034	928	85.6%
6/2+6/1	M1 S/B Off Slip Ahead Left	U	2:1	N/A	C2:B		1	20	-	-	1188	2027:2027	747+545	92.0 : 92.0%
6/3	M1 S/B Off Slip Ahead	U	2:1	N/A	C2:B		1	20	-	-	526	2027	747	70.4%
7/1	Circ E Ahead	U	2:2	N/A	C2:C		1	21	-	-	339	2065	797	42.5%
7/2+7/3	Circ E Right Ahead	U	2:2	N/A	C2:C		1	21	-	-	793	2188:2025	783+178	82.5 : 82.5%
8/1+8/2	A50 W/B Ahead Left	U	2:2	N/A	C2:D		1	24	-	-	1500	1953:2090	810+887	88.4 : 88.4%

Detailed Input Data And Results

8/3	A50 W/B Ahead	U	2:2	N/A	C2:D		1	24	-	-	745	1953	857	87.0%
9/1		U	N/A	N/A	-		-	-	-	-	1210	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	-	1023	Inf	Inf	0.0%
10/1	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	714	Inf	Inf	0.0%
10/2	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	745	Inf	Inf	0.0%
11/1	A50 EB Exit Pedestrian Crossing Ahead	U	3:1	N/A	C3:A		1	209	-	-	1290	1980	1824	70.7%
11/2	A50 EB Exit Pedestrian Crossing Ahead	U	3:1	N/A	C3:A		1	209	-	-	875	1980	1824	48.0%
12/1	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	422	Inf	Inf	0.0%
12/2	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	389	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	-	142	Inf	Inf	0.0%
14/1	Cliffe Lane Left Left2	O	N/A	N/A	-		-	-	-	-	153	2005	259	59.2%
15/1		U	N/A	N/A	-		-	-	-	-	1290	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	-	875	Inf	Inf	0.0%
16/1	A50 WB Entry Pedestrian Crossing Ahead	U	3:2	N/A	C3:B		1	209	-	-	1500	1980	1824	82.3%
16/2	A50 WB Entry Pedestrian Crossing Ahead	U	3:2	N/A	C3:B		1	209	-	-	745	1980	1824	40.9%

Detailed Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
Network	-	-	69	84	0	52.4	32.2	0.0	84.6	-	-	-	-	
M1 J22 / A50 / A511	-	-	69	84	0	52.4	32.2	0.0	84.6	-	-	-	-	
1/1	890	890	-	-	-	2.7	0.0	-	2.7	11.0	11.9	0.0	11.9	
1/2	930	930	-	-	-	2.8	0.0	-	2.8	10.9	12.4	0.0	12.4	
1/3	746	746	-	-	-	2.0	0.0	-	2.0	9.8	8.9	0.0	8.9	
2/2+2/1	843	843	-	-	-	4.8	2.0	-	6.8	29.0	6.5	2.0	8.4	
2/3	41	41	-	-	-	0.2	0.0	-	0.2	20.2	0.5	0.0	0.5	
3/1	414	414	-	-	-	1.0	0.0	-	1.0	8.5	2.4	0.0	2.4	
3/2+3/3	814	814	-	-	-	1.5	0.0	-	1.5	6.6	2.4	0.0	2.4	
4/2+4/1	1083	1083	-	-	-	4.8	6.9	-	11.7	38.8	12.4	6.9	19.3	
4/3	731	731	-	-	-	3.5	5.1	-	8.5	42.0	11.6	5.1	16.6	
5/1	789	789	-	-	-	3.0	0.0	-	3.0	13.8	11.0	0.0	11.0	
5/2	794	794	-	-	-	3.1	0.0	-	3.1	13.8	11.0	0.0	11.0	
6/2+6/1	1188	1188	-	-	-	5.4	5.2	-	10.6	32.1	10.3	5.2	15.5	
6/3	526	526	-	-	-	2.2	1.2	-	3.4	23.4	7.0	1.2	8.2	
7/1	339	339	-	-	-	1.6	0.0	-	1.6	17.4	5.4	0.0	5.4	
7/2+7/3	793	793	-	-	-	1.9	0.0	-	1.9	8.4	4.9	0.0	4.9	
8/1+8/2	1500	1500	-	-	-	6.0	3.7	-	9.6	23.1	11.1	3.7	14.8	
8/3	745	745	-	-	-	3.0	3.2	-	6.2	29.8	10.6	3.2	13.7	
9/1	1210	1210	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/2	1023	1023	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	714	714	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/2	745	745	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	1290	1290	-	-	-	0.7	1.2	-	1.9	5.4	18.3	1.2	19.5	

Detailed Input Data And Results

11/2	875	875	-	-	-	0.3	0.5	-	0.8	3.2	7.8	0.5	8.2	
12/1	422	422	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/2	389	389	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
13/1	142	142	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
14/1	153	153	69	84	0	0.4	0.7	-	1.2	27.2	1.5	0.7	2.2	
15/1	1290	1290	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
15/2	875	875	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
16/1	1500	1500	-	-	-	1.2	2.3	-	3.5	8.4	30.8	2.3	33.1	
16/2	745	745	-	-	-	0.2	0.3	-	0.6	2.8	5.8	0.3	6.1	
C1 - M1/J22 A50/A511 Controller 1 C1 - M1/J22 A50/A511 Controller 1 C2 - M1/J22 A50/A511 Controller 2 C2 - M1/J22 A50/A511 Controller 2 C3 - A50 East Pedestrian Crossings C3 - A50 East Pedestrian Crossings Stream: 1 PRC for Signalled Lanes (%) Stream: 2 PRC for Signalled Lanes (%) Stream: 1 PRC for Signalled Lanes (%) Stream: 2 PRC for Signalled Lanes (%) Stream: 1 PRC for Signalled Lanes (%) Stream: 2 PRC for Signalled Lanes (%) PRC Over All Lanes (%) 11.0 -4.8 -2.2 1.9 27.2 9.4 -4.8 Total Delay for Signalled Lanes (pcuHr) Total Delay for Signalled Lanes (pcuHr) Total Delay for Signalled Lanes (pcuHr) Total Delay for Signalled Lanes (pcuHr) Total Delay for Signalled Lanes (pcuHr) Total Delay for Signalled Lanes (pcuHr) Total Delay Over All Lanes(pcuHr) 14.59 22.66 20.09 19.27 2.70 4.09 84.57 Cycle Time (s): Cycle Time (s): Cycle Time (s): Cycle Time (s): Cycle Time (s): Cycle Time (s): 60 60 57 57 228 228 														

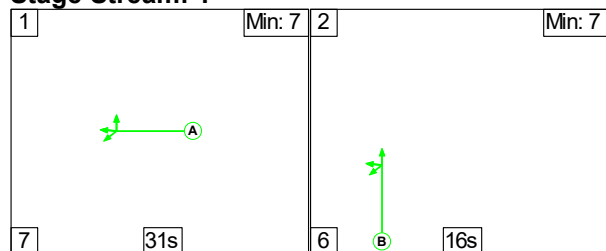
Detailed Input Data And Results

Scenario 2: '2028 Future Base + Proposed Development PM Peak' (FG2: '2028 Future Base + Proposed Development PM Peak', Plan 1: 'Network Control Plan 1')

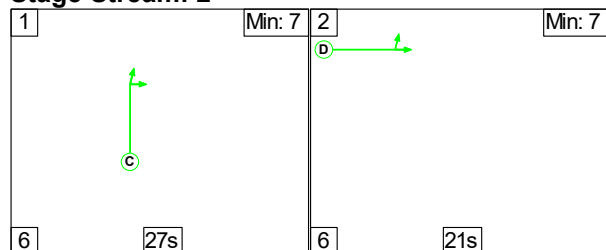
Controller :C1 - M1/J22 A50/A511 Controller 1

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	31	16
Change Point	0	38

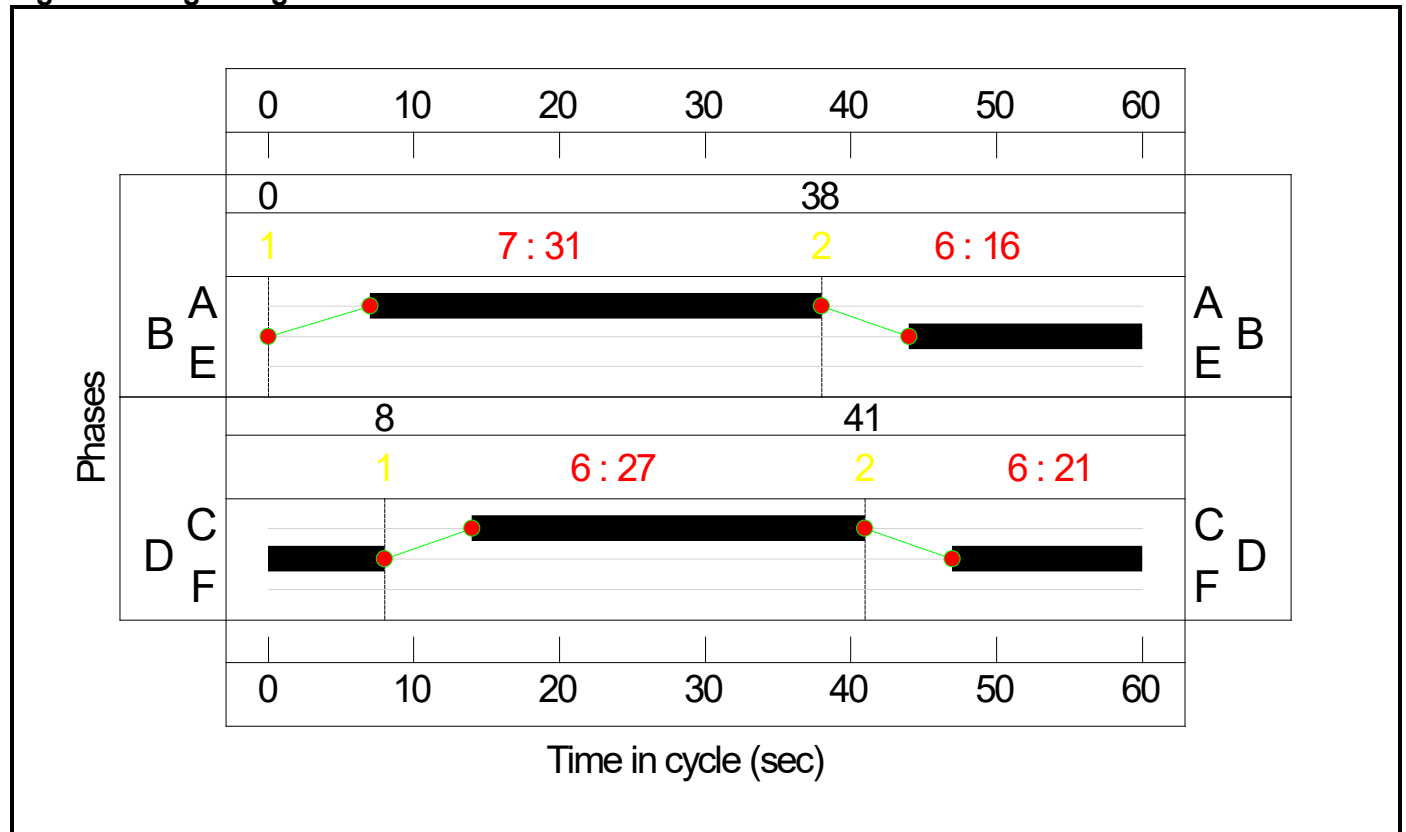
Stage Stream: 2

Stage	1	2
Duration	27	21
Change Point	8	41

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Sth Right Ahead Ahead2	Traffic	1	31	7	38
B	M1 N/B Off-slip Ahead Left Left2	Traffic	1	16	44	0
C	Circ W Right Ahead	Traffic	2	27	14	41
D	A511 E/B Ahead Left	Traffic	2	21	47	8
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

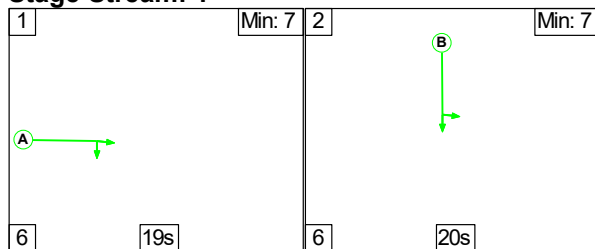
Signal Timings Diagram



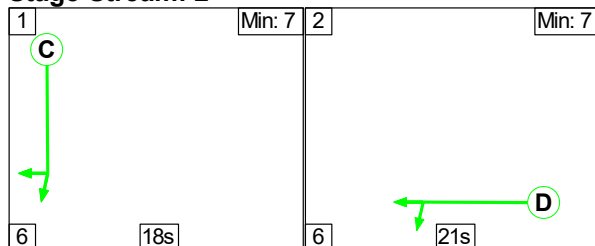
Controller : C2 - M1/J22 A50/A511 Controller 2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	19	20
Change Point	49	23

Detailed Input Data And Results

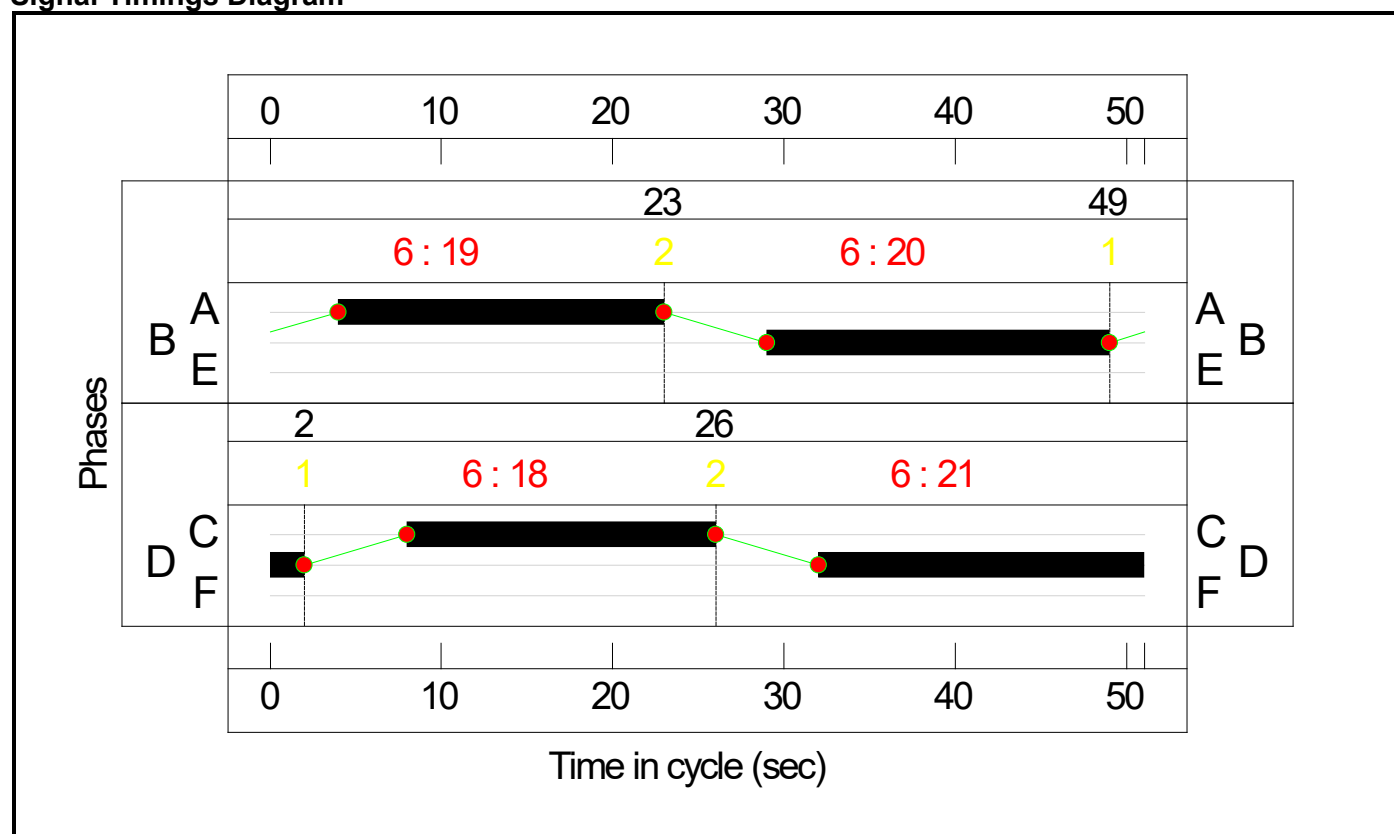
Stage Stream: 2

Stage	1	2
Duration	18	21
Change Point	2	26

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Nth Right Ahead	Traffic	1	19	4	23
B	M1 S/B Off Slip Ahead Left	Traffic	1	20	29	49
C	Circ E Right Ahead	Traffic	2	18	8	26
D	A50 W/B Ahead Left	Traffic	2	21	32	2
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

Signal Timings Diagram

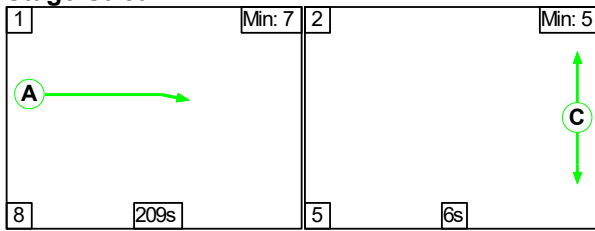


Detailed Input Data And Results

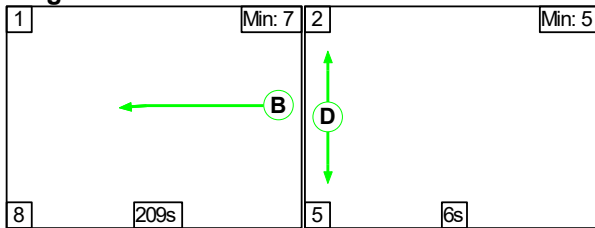
Controller :C3 - A50 East Pedestrian Crossings

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	209	6
Change Point	179	168

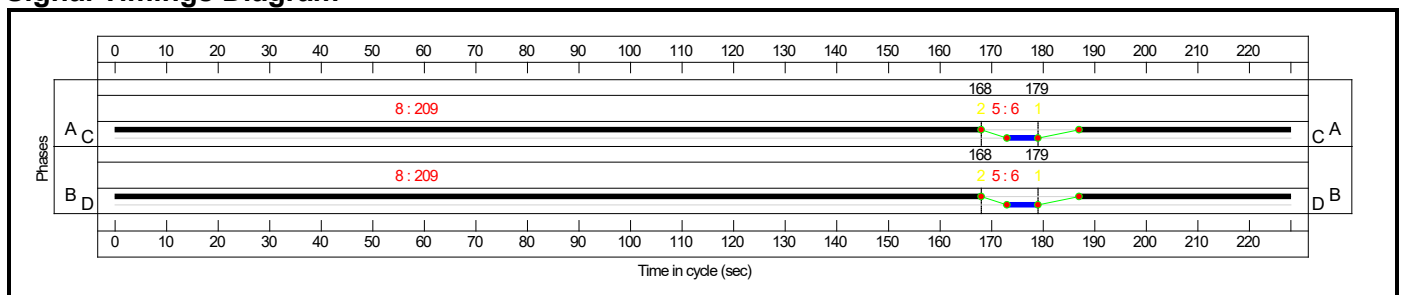
Stage Stream: 2

Stage	1	2
Duration	209	6
Change Point	179	168

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	A50 EB Exit Pedestrian Crossing Ahead	Traffic	1	209	187	168
B	A50 WB Entry Pedestrian Crossing Ahead	Traffic	2	209	187	168
C	Pedestrians across	Pedestrian	1	6	173	179
D	Pedestrians across	Pedestrian	2	6	173	179

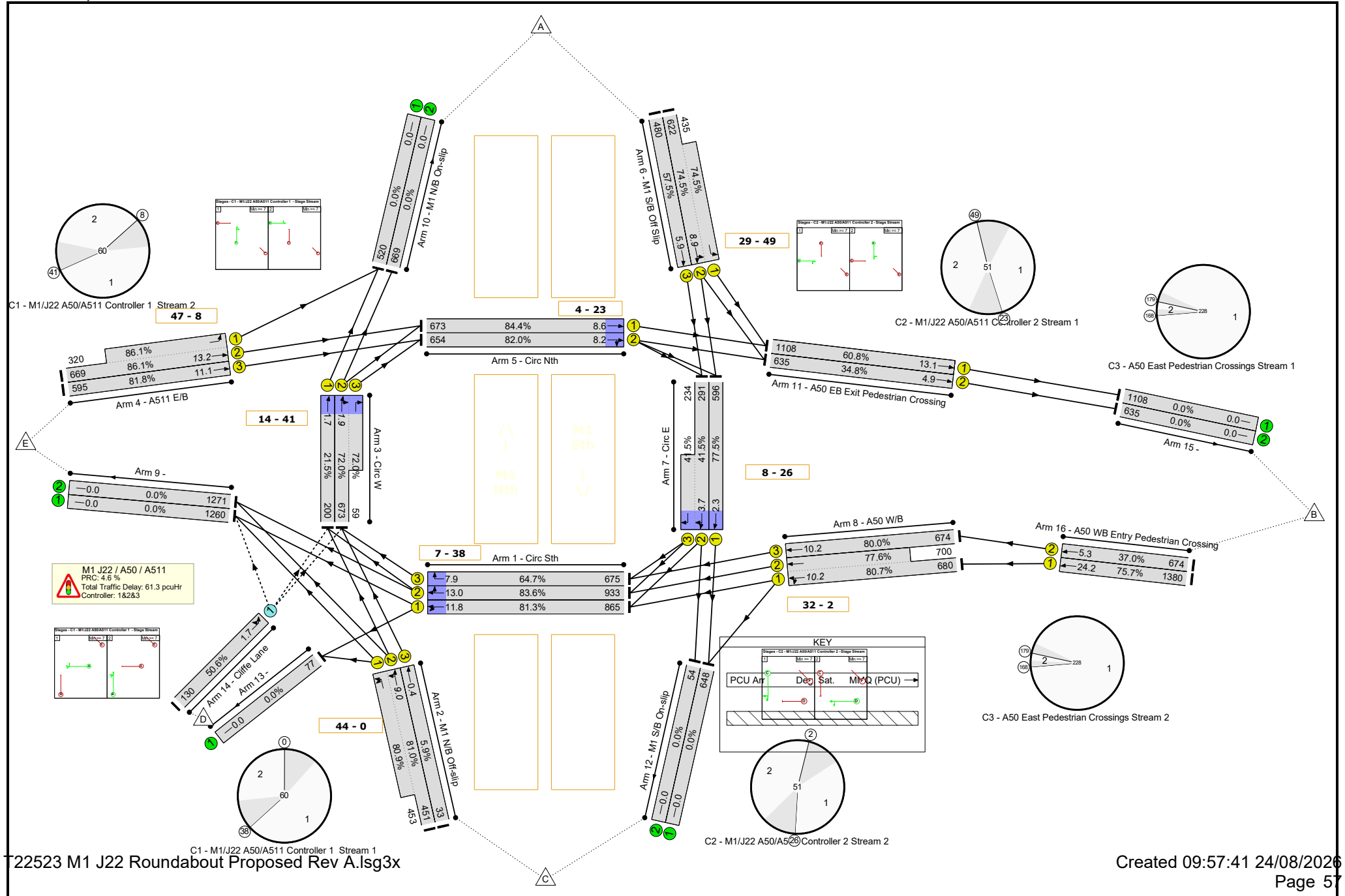
Signal Timings Diagram



Lane Green Times

Junction: M1 J22 / A50 / A511					
Lane	Description	Type	Phases	Start Green	End Green
1/1	Circ Sth Ahead Ahead2	U	A	7	38
1/2	Circ Sth Right Ahead	U	A	7	38
1/3	Circ Sth Right	U	A	7	38
2/1	M1 N/B Off-slip Left Left2	U	B	44	0
2/2	M1 N/B Off-slip Ahead Left	U	B	44	0
2/3	M1 N/B Off-slip Ahead	U	B	44	0
3/1	Circ W Ahead	U	C	14	41
3/2	Circ W Right Ahead	U	C	14	41
3/3	Circ W Right	U	C	14	41
4/1	A511 E/B Left	U	D	47	8
4/2	A511 E/B Ahead	U	D	47	8
4/3	A511 E/B Ahead	U	D	47	8
5/1	Circ Nth Ahead	U	A	4	23
5/2	Circ Nth Right Ahead	U	A	4	23
6/1	M1 S/B Off Slip Left	U	B	29	49
6/2	M1 S/B Off Slip Ahead Left	U	B	29	49
6/3	M1 S/B Off Slip Ahead	U	B	29	49
7/1	Circ E Ahead	U	C	8	26
7/2	Circ E Right Ahead	U	C	8	26
7/3	Circ E Right	U	C	8	26
8/1	A50 W/B Ahead Left	U	D	32	2
8/2	A50 W/B Ahead	U	D	32	2
8/3	A50 W/B Ahead	U	D	32	2
11/1	A50 EB Exit Pedestrian Crossing Ahead	U	A	187	168
11/2	A50 EB Exit Pedestrian Crossing Ahead	U	A	187	168
16/1	A50 WB Entry Pedestrian Crossing Ahead	U	B	187	168
16/2	A50 WB Entry Pedestrian Crossing Ahead	U	B	187	168

Detailed Input Data And Results



Detailed Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Bonus Green	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	-	86.1%
M1 J22 / A50 / A511	-	-	N/A	-	-		-	-	-	-	-	-	-	86.1%
1/1	Circ Sth Ahead Ahead2	U	1:1	N/A	C1:A		1	31	-	-	865	1995	1064	81.3%
1/2	Circ Sth Right Ahead	U	1:1	N/A	C1:A		1	31	-	-	933	2093	1116	83.6%
1/3	Circ Sth Right	U	1:1	N/A	C1:A		1	31	-	-	675	1956	1043	64.7%
2/2+2/1	M1 N/B Off-slip Ahead Left Left2	U	1:1	N/A	C1:B		1	16	-	-	904	1966:1977	557+560	81.0 : 80.9%
2/3	M1 N/B Off-slip Ahead	U	1:1	N/A	C1:B		1	16	-	-	33	1978	560	5.9%
3/1	Circ W Ahead	U	1:2	N/A	C1:C		1	27	-	-	200	1995	931	21.5%
3/2+3/3	Circ W Right Ahead	U	1:2	N/A	C1:C		1	27	-	-	732	2132:1995	935+82	72.0 : 72.0%
4/2+4/1	A511 E/B Ahead Left	U	1:2	N/A	C1:D		1	21	-	-	989	2120:1966	777+372	86.1 : 86.1%
4/3	A511 E/B Ahead	U	1:2	N/A	C1:D		1	21	-	-	595	1983	727	81.8%
5/1	Circ Nth Ahead	U	2:1	N/A	C2:A		1	19	-	-	673	2034	798	84.4%
5/2	Circ Nth Right Ahead	U	2:1	N/A	C2:A		1	19	-	-	654	2034	798	82.0%
6/2+6/1	M1 S/B Off Slip Ahead Left	U	2:1	N/A	C2:B		1	20	-	-	1057	2027:2027	835+584	74.5 : 74.5%
6/3	M1 S/B Off Slip Ahead	U	2:1	N/A	C2:B		1	20	-	-	480	2027	835	57.5%
7/1	Circ E Ahead	U	2:2	N/A	C2:C		1	18	-	-	596	2065	769	77.5%
7/2+7/3	Circ E Right Ahead	U	2:2	N/A	C2:C		1	18	-	-	525	2170:2025	702+564	41.5 : 41.5%
8/1+8/2	A50 W/B Ahead Left	U	2:2	N/A	C2:D		1	21	-	-	1380	1953:2090	842+902	80.7 : 77.6%

Detailed Input Data And Results

8/3	A50 W/B Ahead	U	2:2	N/A	C2:D		1	21	-	-	674	1953	842	80.0%
9/1		U	N/A	N/A	-		-	-	-	-	1260	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	-	1271	Inf	Inf	0.0%
10/1	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	520	Inf	Inf	0.0%
10/2	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	669	Inf	Inf	0.0%
11/1	A50 EB Exit Pedestrian Crossing Ahead	U	3:1	N/A	C3:A		1	209	-	-	1108	1980	1824	60.8%
11/2	A50 EB Exit Pedestrian Crossing Ahead	U	3:1	N/A	C3:A		1	209	-	-	635	1980	1824	34.8%
12/1	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	648	Inf	Inf	0.0%
12/2	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	54	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	-	77	Inf	Inf	0.0%
14/1	Cliffe Lane Left Left2	O	N/A	N/A	-		-	-	-	-	130	2005	257	50.6%
15/1		U	N/A	N/A	-		-	-	-	-	1108	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	-	635	Inf	Inf	0.0%
16/1	A50 WB Entry Pedestrian Crossing Ahead	U	3:2	N/A	C3:B		1	209	-	-	1380	1980	1824	75.7%
16/2	A50 WB Entry Pedestrian Crossing Ahead	U	3:2	N/A	C3:B		1	209	-	-	674	1980	1824	37.0%

Detailed Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
Network	-	-	64	66	0	44.7	16.6	0.0	61.3	-	-	-	-	
M1 J22 / A50 / A511	-	-	64	66	0	44.7	16.6	0.0	61.3	-	-	-	-	
1/1	865	865	-	-	-	2.8	0.0	-	2.8	11.5	11.8	0.0	11.8	
1/2	933	933	-	-	-	3.1	0.0	-	3.1	11.8	13.0	0.0	13.0	
1/3	675	675	-	-	-	1.9	0.0	-	1.9	10.0	7.9	0.0	7.9	
2/2+2/1	904	904	-	-	-	5.0	2.1	-	7.1	28.3	6.9	2.1	9.0	
2/3	33	33	-	-	-	0.1	0.0	-	0.2	19.2	0.4	0.0	0.4	
3/1	200	200	-	-	-	0.6	0.0	-	0.6	10.4	1.7	0.0	1.7	
3/2+3/3	732	732	-	-	-	1.2	0.0	-	1.2	5.7	1.9	0.0	1.9	
4/2+4/1	989	989	-	-	-	4.5	3.0	-	7.5	27.4	10.2	3.0	13.2	
4/3	595	595	-	-	-	2.8	2.2	-	5.0	30.4	8.9	2.2	11.1	
5/1	673	673	-	-	-	2.6	0.0	-	2.6	14.1	8.6	0.0	8.6	
5/2	654	654	-	-	-	2.5	0.0	-	2.5	13.9	8.2	0.0	8.2	
6/2+6/1	1057	1057	-	-	-	3.6	1.5	-	5.0	17.1	7.4	1.5	8.9	
6/3	480	480	-	-	-	1.5	0.7	-	2.2	16.6	5.2	0.7	5.9	
7/1	596	596	-	-	-	1.0	0.0	-	1.0	6.0	2.3	0.0	2.3	
7/2+7/3	525	525	-	-	-	2.2	0.0	-	2.2	14.9	3.7	0.0	3.7	
8/1+8/2	1380	1380	-	-	-	4.8	1.9	-	6.7	17.4	8.4	1.9	10.2	
8/3	674	674	-	-	-	2.4	2.0	-	4.3	23.0	8.2	2.0	10.2	
9/1	1260	1260	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/2	1271	1271	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	520	520	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/2	669	669	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	1108	1108	-	-	-	0.5	0.8	-	1.3	4.1	12.3	0.8	13.1	

Detailed Input Data And Results

11/2	635	635	-	-	-	0.2	0.3	-	0.5	2.6	4.6	0.3	4.9	
12/1	648	648	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/2	54	54	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
13/1	77	77	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
14/1	130	130	64	66	0	0.4	0.5	-	0.9	23.9	1.2	0.5	1.7	
15/1	1108	1108	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
15/2	635	635	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
16/1	1380	1380	-	-	-	0.9	1.5	-	2.4	6.4	22.6	1.5	24.2	
16/2	674	674	-	-	-	0.2	0.3	-	0.5	2.6	5.1	0.3	5.3	
C1 - M1/J22 A50/A511 Controller 1 C1 - M1/J22 A50/A511 Controller 1 C2 - M1/J22 A50/A511 Controller 2 C2 - M1/J22 A50/A511 Controller 2 C3 - A50 East Pedestrian Crossings C3 - A50 East Pedestrian Crossings Stream: 1 PRC for Signalled Lanes (%) Stream: 2 PRC for Signalled Lanes (%) Stream: 1 PRC for Signalled Lanes (%) Stream: 2 PRC for Signalled Lanes (%) Stream: 1 PRC for Signalled Lanes (%) Stream: 2 PRC for Signalled Lanes (%) PRC Over All Lanes (%) 7.7 4.6 6.7 11.5 48.1 18.9 4.6 Total Delay for Signalled Lanes (pcuHr) Total Delay for Signalled Lanes (pcuHr) Total Delay for Signalled Lanes (pcuHr) Total Delay for Signalled Lanes (pcuHr) Total Delay for Signalled Lanes (pcuHr) Total Delay for Signalled Lanes (pcuHr) Total Delay Over All Lanes(pcuHr) 14.98 14.28 12.38 14.16 1.72 2.94 61.32 Cycle Time (s): Cycle Time (s): Cycle Time (s): Cycle Time (s): Cycle Time (s): Cycle Time (s): 60 60 51 51 228 228 														

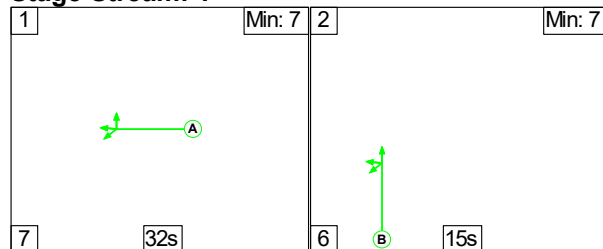
Detailed Input Data And Results

Scenario 3: '2030 Future Base + Proposed Development AM Peak' (FG3: '2030 Future Base + Proposed Development AM Peak', Plan 1: 'Network Control Plan 1')

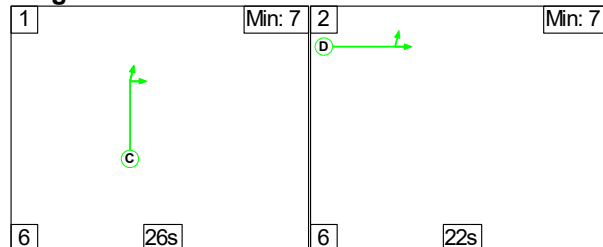
Controller :C1 - M1/J22 A50/A511 Controller 1

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

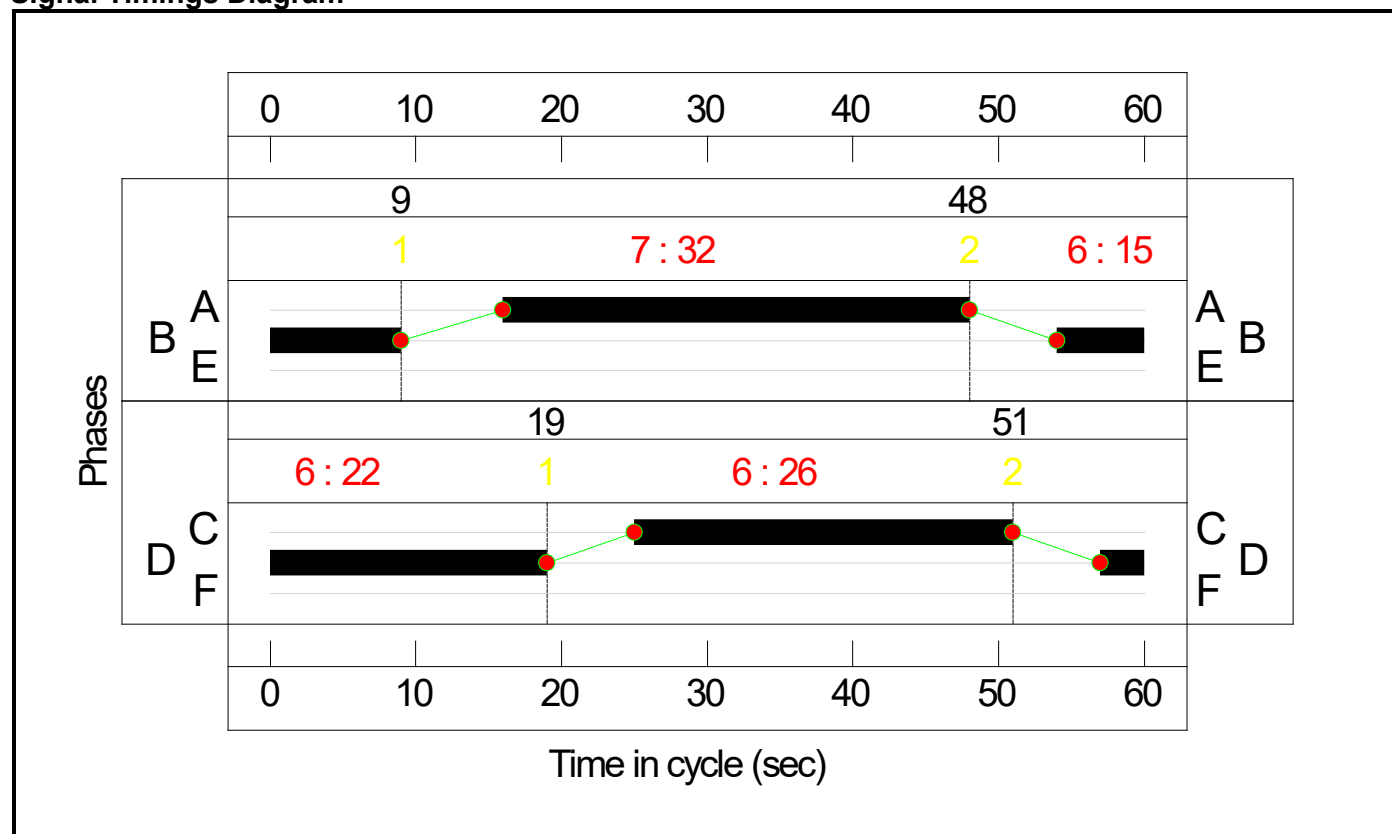
Stage	1	2
Duration	32	15
Change Point	9	48

Stage Stream: 2

Stage	1	2
Duration	26	22
Change Point	19	51

Phase Timings

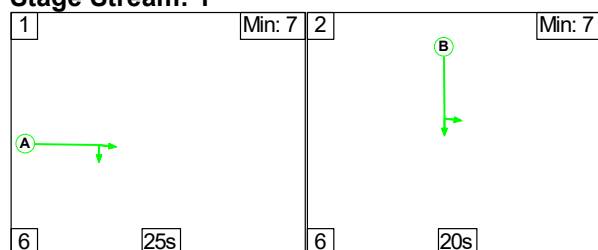
Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Sth Right Ahead Ahead2	Traffic	1	32	16	48
B	M1 N/B Off-slip Ahead Left Left2	Traffic	1	15	54	9
C	Circ W Right Ahead	Traffic	2	26	25	51
D	A511 E/B Ahead Left	Traffic	2	22	57	19
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

Signal Timings Diagram

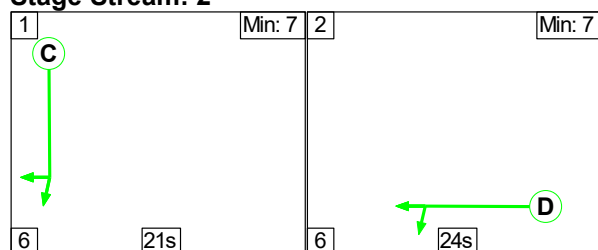
Controller : C2 - M1/J22 A50/A511 Controller 2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2

**Stage Timings**

Stage Stream: 1

Stage	1	2
Duration	25	20
Change Point	32	6

Detailed Input Data And Results

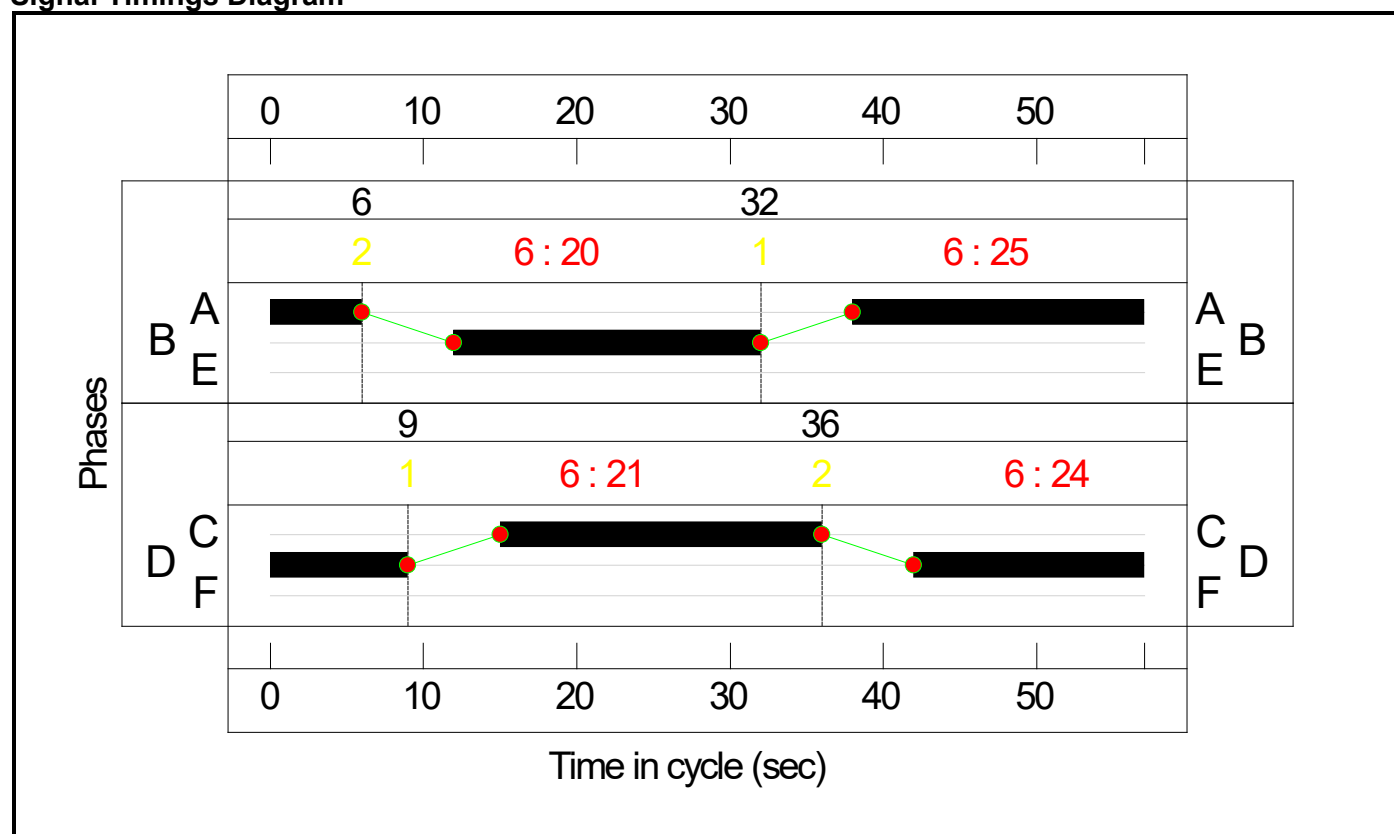
Stage Stream: 2

Stage	1	2
Duration	21	24
Change Point	9	36

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Nth Right Ahead	Traffic	1	25	38	6
B	M1 S/B Off Slip Ahead Left	Traffic	1	20	12	32
C	Circ E Right Ahead	Traffic	2	21	15	36
D	A50 W/B Ahead Left	Traffic	2	24	42	9
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

Signal Timings Diagram

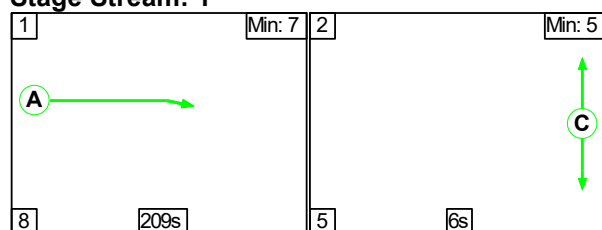


Detailed Input Data And Results

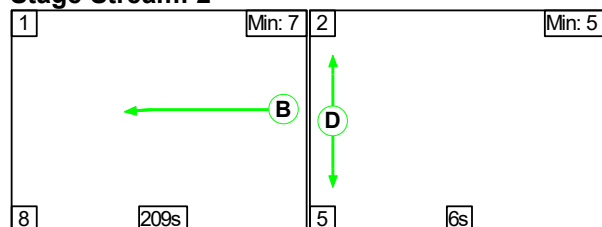
Controller :C3 - A50 East Pedestrian Crossings

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	209	6
Change Point	205	194

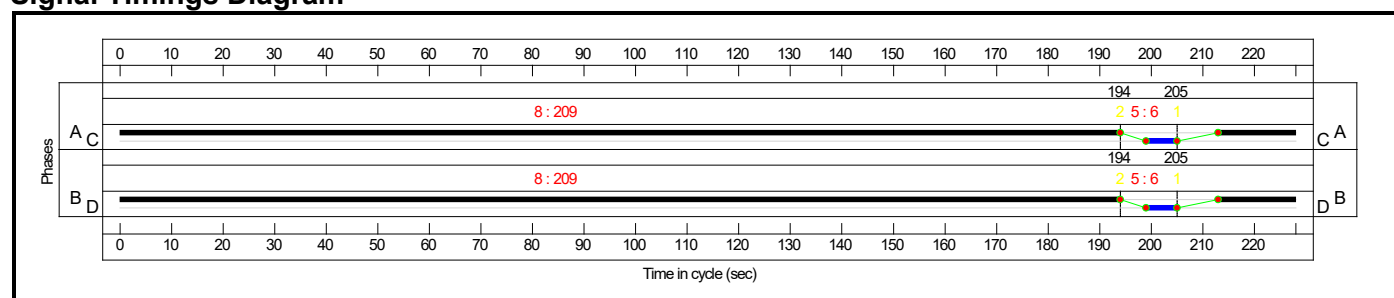
Stage Stream: 2

Stage	1	2
Duration	209	6
Change Point	205	194

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	A50 EB Exit Pedestrian Crossing Ahead	Traffic	1	209	213	194
B	A50 WB Entry Pedestrian Crossing Ahead	Traffic	2	209	213	194
C	Pedestrians across	Pedestrian	1	6	199	205
D	Pedestrians across	Pedestrian	2	6	199	205

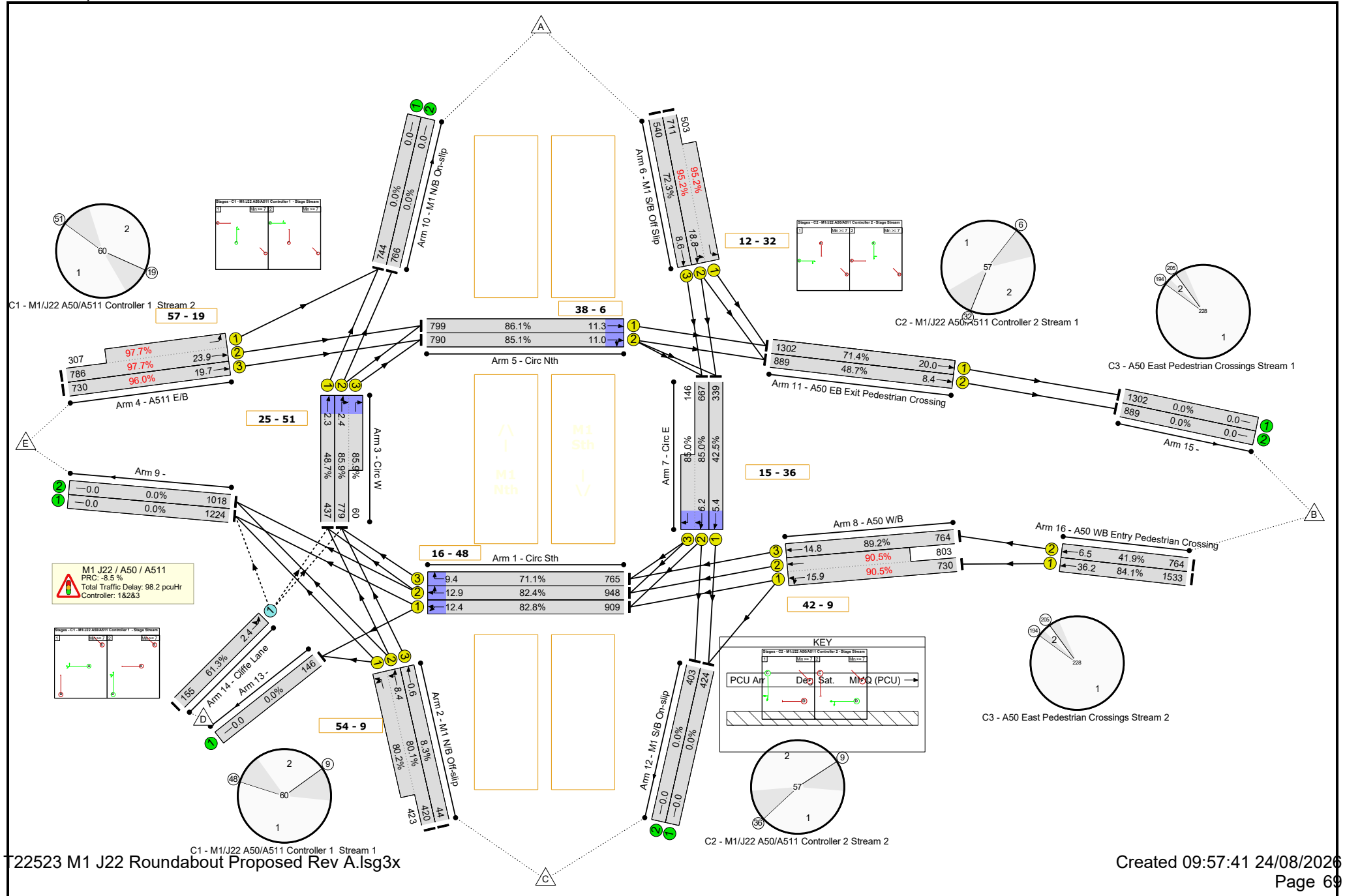
Signal Timings Diagram



Lane Green Times

Junction: M1 J22 / A50 / A511					
Lane	Description	Type	Phases	Start Green	End Green
1/1	Circ Sth Ahead Ahead2	U	A	16	48
1/2	Circ Sth Right Ahead	U	A	16	48
1/3	Circ Sth Right	U	A	16	48
2/1	M1 N/B Off-slip Left Left2	U	B	54	9
2/2	M1 N/B Off-slip Ahead Left	U	B	54	9
2/3	M1 N/B Off-slip Ahead	U	B	54	9
3/1	Circ W Ahead	U	C	25	51
3/2	Circ W Right Ahead	U	C	25	51
3/3	Circ W Right	U	C	25	51
4/1	A511 E/B Left	U	D	57	19
4/2	A511 E/B Ahead	U	D	57	19
4/3	A511 E/B Ahead	U	D	57	19
5/1	Circ Nth Ahead	U	A	38	6
5/2	Circ Nth Right Ahead	U	A	38	6
6/1	M1 S/B Off Slip Left	U	B	12	32
6/2	M1 S/B Off Slip Ahead Left	U	B	12	32
6/3	M1 S/B Off Slip Ahead	U	B	12	32
7/1	Circ E Ahead	U	C	15	36
7/2	Circ E Right Ahead	U	C	15	36
7/3	Circ E Right	U	C	15	36
8/1	A50 W/B Ahead Left	U	D	42	9
8/2	A50 W/B Ahead	U	D	42	9
8/3	A50 W/B Ahead	U	D	42	9
11/1	A50 EB Exit Pedestrian Crossing Ahead	U	A	213	194
11/2	A50 EB Exit Pedestrian Crossing Ahead	U	A	213	194
16/1	A50 WB Entry Pedestrian Crossing Ahead	U	B	213	194
16/2	A50 WB Entry Pedestrian Crossing Ahead	U	B	213	194

Detailed Input Data And Results



Detailed Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Bonus Green	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	-	97.7%
M1 J22 / A50 / A511	-	-	N/A	-	-		-	-	-	-	-	-	-	97.7%
1/1	Circ Sth Ahead Ahead2	U	1:1	N/A	C1:A		1	32	-	-	909	1995	1097	82.8%
1/2	Circ Sth Right Ahead	U	1:1	N/A	C1:A		1	32	-	-	948	2093	1151	82.4%
1/3	Circ Sth Right	U	1:1	N/A	C1:A		1	32	-	-	765	1956	1076	71.1%
2/2+2/1	M1 N/B Off-slip Ahead Left Left2	U	1:1	N/A	C1:B		1	15	-	-	843	1966:1977	524+527	80.1 : 80.2%
2/3	M1 N/B Off-slip Ahead	U	1:1	N/A	C1:B		1	15	-	-	44	1978	527	8.3%
3/1	Circ W Ahead	U	1:2	N/A	C1:C		1	26	-	-	437	1995	898	48.7%
3/2+3/3	Circ W Right Ahead	U	1:2	N/A	C1:C		1	26	-	-	839	2132:1995	907+70	85.9 : 85.9%
4/2+4/1	A511 E/B Ahead Left	U	1:2	N/A	C1:D		1	22	-	-	1093	2120:1966	805+314	97.7 : 97.7%
4/3	A511 E/B Ahead	U	1:2	N/A	C1:D		1	22	-	-	730	1983	760	96.0%
5/1	Circ Nth Ahead	U	2:1	N/A	C2:A		1	25	-	-	799	2034	928	86.1%
5/2	Circ Nth Right Ahead	U	2:1	N/A	C2:A		1	25	-	-	790	2034	928	85.1%
6/2+6/1	M1 S/B Off Slip Ahead Left	U	2:1	N/A	C2:B		1	20	-	-	1214	2027:2027	747+528	95.2 : 95.2%
6/3	M1 S/B Off Slip Ahead	U	2:1	N/A	C2:B		1	20	-	-	540	2027	747	72.3%
7/1	Circ E Ahead	U	2:2	N/A	C2:C		1	21	-	-	339	2065	797	42.5%
7/2+7/3	Circ E Right Ahead	U	2:2	N/A	C2:C		1	21	-	-	813	2188:2025	785+172	85.0 : 85.0%
8/1+8/2	A50 W/B Ahead Left	U	2:2	N/A	C2:D		1	24	-	-	1533	1953:2090	807+887	90.5 : 90.5%

Detailed Input Data And Results

8/3	A50 W/B Ahead	U	2:2	N/A	C2:D		1	24	-	-	764	1953	857	89.2%
9/1		U	N/A	N/A	-		-	-	-	-	1224	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	-	1018	Inf	Inf	0.0%
10/1	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	744	Inf	Inf	0.0%
10/2	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	766	Inf	Inf	0.0%
11/1	A50 EB Exit Pedestrian Crossing Ahead	U	3:1	N/A	C3:A		1	209	-	-	1302	1980	1824	71.4%
11/2	A50 EB Exit Pedestrian Crossing Ahead	U	3:1	N/A	C3:A		1	209	-	-	889	1980	1824	48.7%
12/1	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	424	Inf	Inf	0.0%
12/2	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	403	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	-	146	Inf	Inf	0.0%
14/1	Cliffe Lane Left Left2	O	N/A	N/A	-		-	-	-	-	155	2005	253	61.3%
15/1		U	N/A	N/A	-		-	-	-	-	1302	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	-	889	Inf	Inf	0.0%
16/1	A50 WB Entry Pedestrian Crossing Ahead	U	3:2	N/A	C3:B		1	209	-	-	1533	1980	1824	84.1%
16/2	A50 WB Entry Pedestrian Crossing Ahead	U	3:2	N/A	C3:B		1	209	-	-	764	1980	1824	41.9%

Detailed Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
Network	-	-	64	91	0	54.1	44.1	0.0	98.2	-	-	-	-	
M1 J22 / A50 / A511	-	-	64	91	0	54.1	44.1	0.0	98.2	-	-	-	-	
1/1	909	909	-	-	-	2.8	0.0	-	2.8	11.2	12.4	0.0	12.4	
1/2	948	948	-	-	-	2.9	0.0	-	2.9	11.1	12.9	0.0	12.9	
1/3	765	765	-	-	-	2.1	0.0	-	2.1	10.0	9.4	0.0	9.4	
2/2+2/1	843	843	-	-	-	4.8	2.0	-	6.8	29.0	6.5	2.0	8.4	
2/3	44	44	-	-	-	0.2	0.0	-	0.2	20.2	0.5	0.0	0.6	
3/1	437	437	-	-	-	1.0	0.0	-	1.0	7.8	2.3	0.0	2.3	
3/2+3/3	839	839	-	-	-	1.4	0.0	-	1.4	6.1	2.4	0.0	2.4	
4/2+4/1	1093	1093	-	-	-	5.1	11.2	-	16.3	53.8	12.7	11.2	23.9	
4/3	730	730	-	-	-	3.7	7.9	-	11.6	57.2	11.8	7.9	19.7	
5/1	799	799	-	-	-	3.1	0.0	-	3.1	13.9	11.3	0.0	11.3	
5/2	790	790	-	-	-	3.0	0.0	-	3.0	13.8	11.0	0.0	11.0	
6/2+6/1	1214	1214	-	-	-	5.6	7.9	-	13.5	39.9	10.9	7.9	18.8	
6/3	540	540	-	-	-	2.3	1.3	-	3.6	24.1	7.4	1.3	8.6	
7/1	339	339	-	-	-	1.7	0.0	-	1.7	18.4	5.4	0.0	5.4	
7/2+7/3	813	813	-	-	-	1.9	0.0	-	1.9	8.5	6.2	0.0	6.2	
8/1+8/2	1533	1533	-	-	-	6.2	4.5	-	10.7	25.1	11.4	4.5	15.9	
8/3	764	764	-	-	-	3.1	3.8	-	6.9	32.7	11.0	3.8	14.8	
9/1	1224	1224	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/2	1018	1018	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	744	744	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/2	766	766	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	1302	1302	-	-	-	0.8	1.2	-	2.0	5.5	18.8	1.2	20.0	

Detailed Input Data And Results

11/2	889	889	-	-	-	0.3	0.5	-	0.8	3.2	7.9	0.5	8.4	
12/1	424	424	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/2	403	403	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
13/1	146	146	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
14/1	155	155	64	91	0	0.5	0.8	-	1.2	28.9	1.6	0.8	2.4	
15/1	1302	1302	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
15/2	889	889	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
16/1	1533	1533	-	-	-	1.3	2.6	-	3.9	9.2	33.6	2.6	36.2	
16/2	764	764	-	-	-	0.2	0.4	-	0.6	2.9	6.2	0.4	6.5	
C1 - M1/J22 A50/A511 Controller 1 Stream: 1 PRC for Signalled Lanes (%) 8.6 C1 - M1/J22 A50/A511 Controller 1 Stream: 2 PRC for Signalled Lanes (%) -8.5 C2 - M1/J22 A50/A511 Controller 2 Stream: 1 PRC for Signalled Lanes (%) -5.8 C2 - M1/J22 A50/A511 Controller 2 Stream: 2 PRC for Signalled Lanes (%) -0.5 C3 - A50 East Pedestrian Crossings Stream: 1 PRC for Signalled Lanes (%) 26.1 C3 - A50 East Pedestrian Crossings Stream: 2 PRC for Signalled Lanes (%) 7.1 PRC Over All Lanes (%) -8.5 Total Delay for Signalled Lanes (pcuHr) 14.90 Total Delay for Signalled Lanes (pcuHr) 30.32 Total Delay for Signalled Lanes (pcuHr) 23.19 Total Delay for Signalled Lanes (pcuHr) 21.26 Total Delay for Signalled Lanes (pcuHr) 2.79 Total Delay for Signalled Lanes (pcuHr) 4.54 Total Delay Over All Lanes(pcuHr) 98.24 Cycle Time (s) 60 Cycle Time (s) 60 Cycle Time (s) 57 Cycle Time (s) 57 Cycle Time (s) 228 Cycle Time (s) 228														

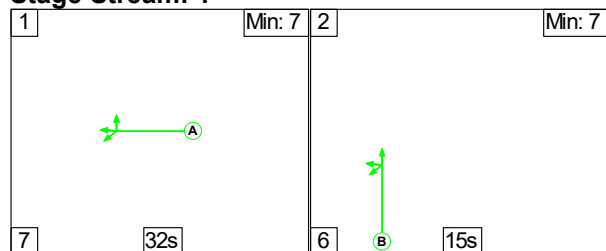
Detailed Input Data And Results

Scenario 4: '2030 Future Base + Proposed Development PM Peak' (FG4: '2030 Future Base + Proposed Development PM Peak', Plan 1: 'Network Control Plan 1')

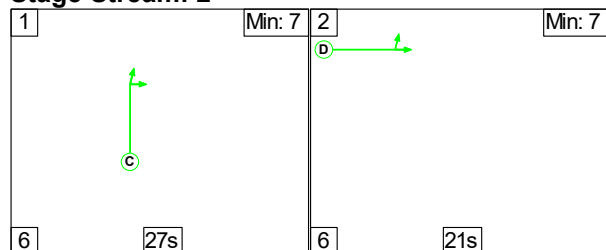
Controller :C1 - M1/J22 A50/A511 Controller 1

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

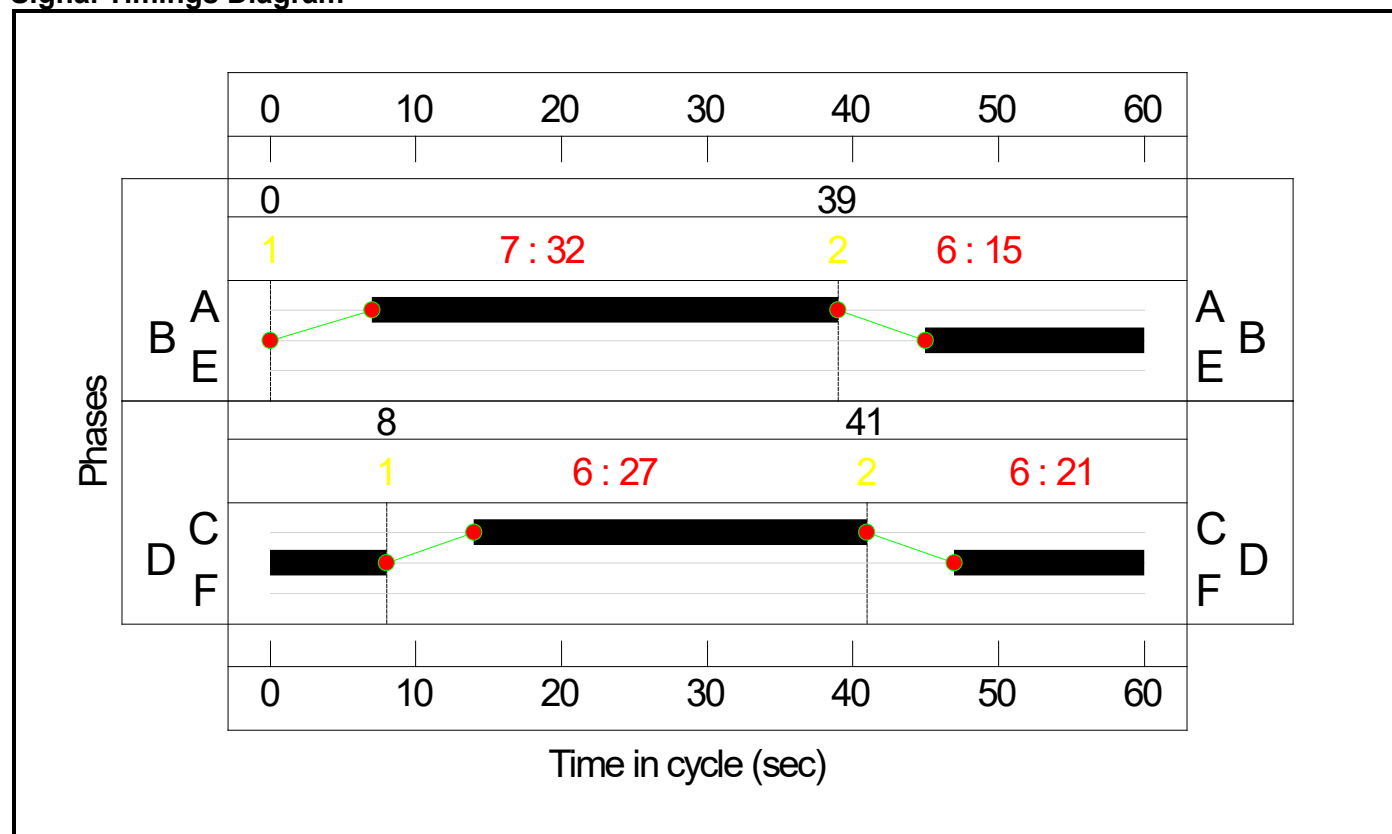
Stage	1	2
Duration	32	15
Change Point	0	39

Stage Stream: 2

Stage	1	2
Duration	27	21
Change Point	8	41

Phase Timings

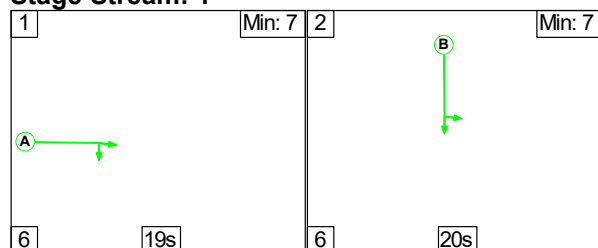
Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Sth Right Ahead Ahead2	Traffic	1	32	7	39
B	M1 N/B Off-slip Ahead Left Left2	Traffic	1	15	45	0
C	Circ W Right Ahead	Traffic	2	27	14	41
D	A511 E/B Ahead Left	Traffic	2	21	47	8
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

Signal Timings Diagram

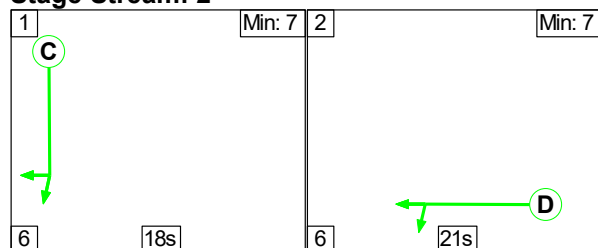
Controller : C2 - M1/J22 A50/A511 Controller 2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2

**Stage Timings**

Stage Stream: 1

Stage	1	2
Duration	19	20
Change Point	49	23

Detailed Input Data And Results

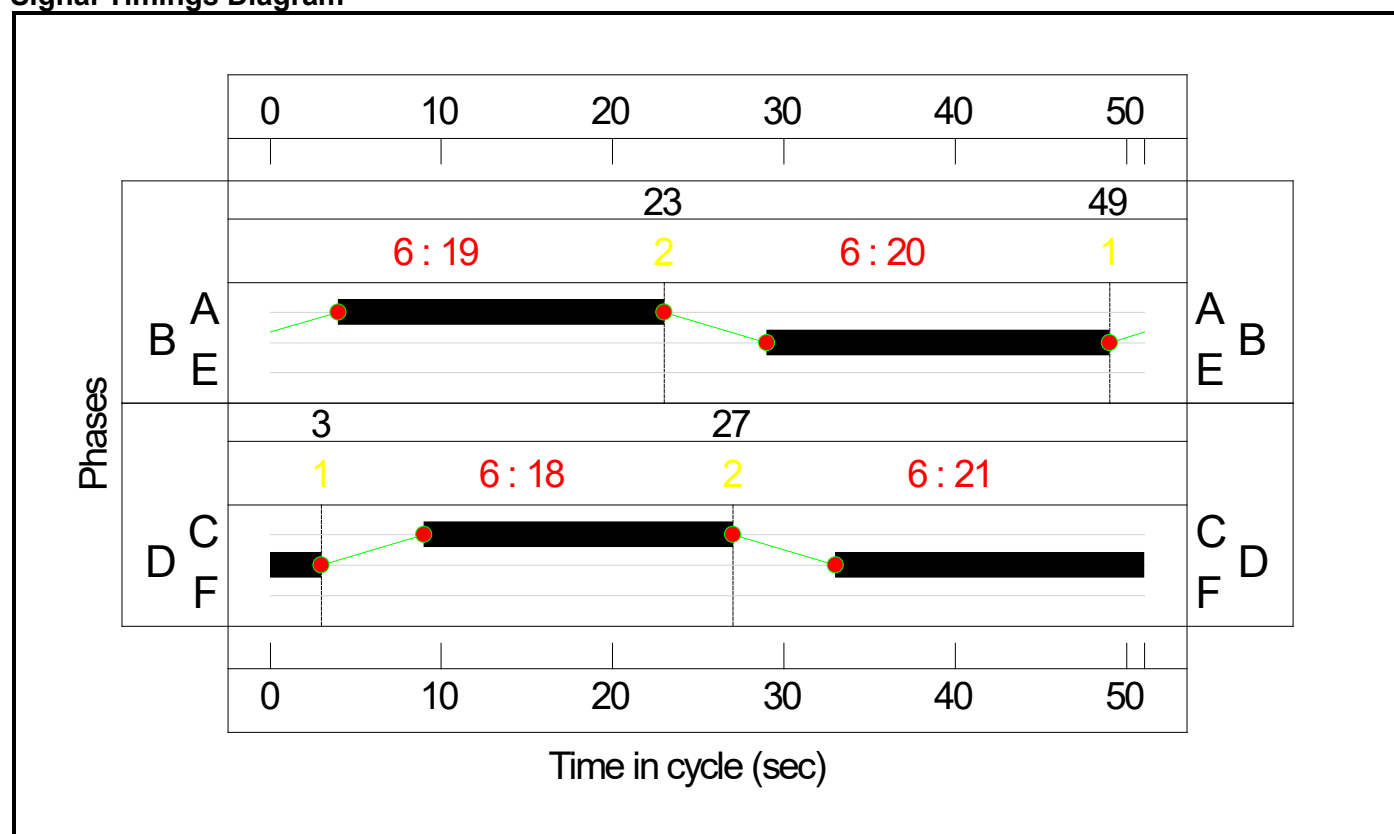
Stage Stream: 2

Stage	1	2
Duration	18	21
Change Point	3	27

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Nth Right Ahead	Traffic	1	19	4	23
B	M1 S/B Off Slip Ahead Left	Traffic	1	20	29	49
C	Circ E Right Ahead	Traffic	2	18	9	27
D	A50 W/B Ahead Left	Traffic	2	21	33	3
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

Signal Timings Diagram

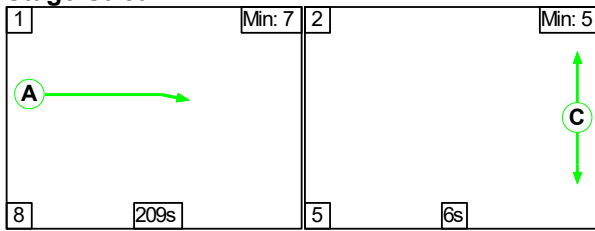


Detailed Input Data And Results

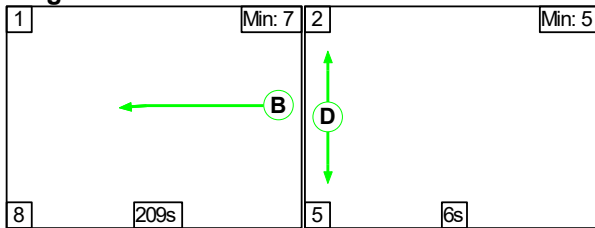
Controller :C3 - A50 East Pedestrian Crossings

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	209	6
Change Point	227	216

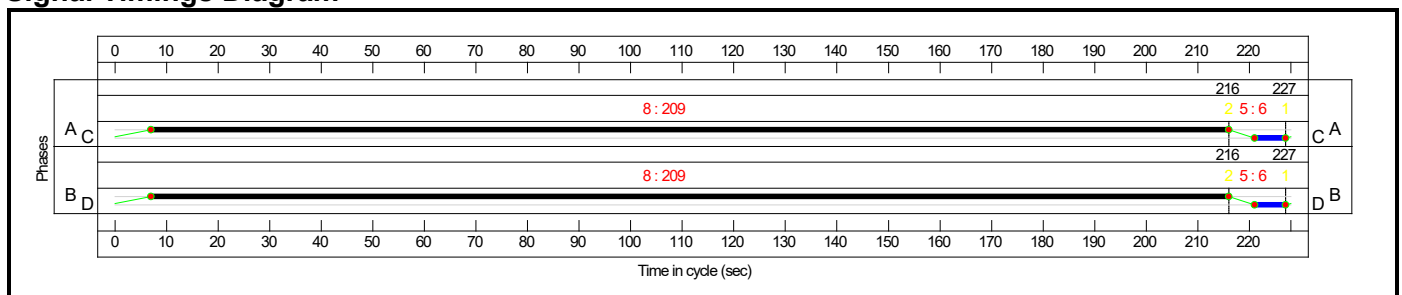
Stage Stream: 2

Stage	1	2
Duration	209	6
Change Point	227	216

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	A50 EB Exit Pedestrian Crossing Ahead	Traffic	1	209	7	216
B	A50 WB Entry Pedestrian Crossing Ahead	Traffic	2	209	7	216
C	Pedestrians across	Pedestrian	1	6	221	227
D	Pedestrians across	Pedestrian	2	6	221	227

Signal Timings Diagram



Lane Green Times

Junction: M1 J22 / A50 / A511					
Lane	Description	Type	Phases	Start Green	End Green
1/1	Circ Sth Ahead Ahead2	U	A	7	39
1/2	Circ Sth Right Ahead	U	A	7	39
1/3	Circ Sth Right	U	A	7	39
2/1	M1 N/B Off-slip Left Left2	U	B	45	0
2/2	M1 N/B Off-slip Ahead Left	U	B	45	0
2/3	M1 N/B Off-slip Ahead	U	B	45	0
3/1	Circ W Ahead	U	C	14	41
3/2	Circ W Right Ahead	U	C	14	41
3/3	Circ W Right	U	C	14	41
4/1	A511 E/B Left	U	D	47	8
4/2	A511 E/B Ahead	U	D	47	8
4/3	A511 E/B Ahead	U	D	47	8
5/1	Circ Nth Ahead	U	A	4	23
5/2	Circ Nth Right Ahead	U	A	4	23
6/1	M1 S/B Off Slip Left	U	B	29	49
6/2	M1 S/B Off Slip Ahead Left	U	B	29	49
6/3	M1 S/B Off Slip Ahead	U	B	29	49
7/1	Circ E Ahead	U	C	9	27
7/2	Circ E Right Ahead	U	C	9	27
7/3	Circ E Right	U	C	9	27
8/1	A50 W/B Ahead Left	U	D	33	3
8/2	A50 W/B Ahead	U	D	33	3
8/3	A50 W/B Ahead	U	D	33	3
11/1	A50 EB Exit Pedestrian Crossing Ahead	U	A	7	216
11/2	A50 EB Exit Pedestrian Crossing Ahead	U	A	7	216
16/1	A50 WB Entry Pedestrian Crossing Ahead	U	B	7	216
16/2	A50 WB Entry Pedestrian Crossing Ahead	U	B	7	216

The diagram illustrates a 12-arm roundabout with the following arms and associated data:

- Arm 1 - Circ Sth:** 7.9 (64.7%, 696), 13.0 (83.2%, 958), 12.2 (81.7%, 897)
- Arm 2 - M1 N/B Off-slip:** 3.4 (6.4%, 453), 10.2 (86.4%, 455), 0.5 (6.4%, 453)
- Arm 3 - Circ W:** 1.9 (24.4%, 227), 2.2 (74.7%, 666), 7.4 (74.7%, 666)
- Arm 4 - A511 E/B:** 317 (85.3%, 12.9), 663 (85.3%, 10.7), 587 (80.7%, 10.7)
- Arm 5 - Circ Nth:** 666 (83.5%, 8.5), 652 (81.7%, 8.2)
- Arm 6 - M1 S/B Off-slip:** 485 (58.1%, 5.9), 457 (77.8%, 7.6), 457 (77.8%, 7.6)
- Arm 7 - Circ E:** 230 (42.4%, 3.8), 299 (42.4%, 2.3), 630 (81.9%, 2.3)
- Arm 8 - A50 W/B:** 11.0 (82.5%, 695), 11.1 (80.9%, 729), 11.1 (82.5%, 695)
- Arm 9 -:** 1280 (0.0%, -0.0), 1283 (0.0%, -0.0)
- Arm 10 - M1 N/B On-slip:** 544 (0.0%, 0.0), 693 (0.0%, 0.0)
- Arm 11 - A50 EB Exit Pedestrian Crossing:** 1123 (61.6%, 13.6), 627 (34.4%, 4.8)
- Arm 12 - M1 S/B On-slip:** 41 (0.0%, -0.0), 666 (0.0%, -0.0)
- Arm 13 -:** 90 (0.0%, -0.0)
- Arm 14 - Cliffe Lane:** 148 (61.3%, 2.3)
- Arm 15 -:** 1123 (0.0%, 0.0), 627 (0.0%, 0.0)
- Arm 16 - A50 WB Entry Pedestrian Crossing:** 5.5 (38.1%, 695), 27.1 (78.1%, 1424)

Control and Performance Data:

- Controller 1 (C1 - M1/J22 A50/A511):** Stream 1, Stream 2, Stream 3. PRC: 4.2%. Total Traffic Delay: 64.5 pcu/hr. Controller: 18283.
- Controller 2 (C2 - M1/J22 A50/A511):** Stream 1, Stream 2.
- Controller 3 (C3 - A50 East Pedestrian Crossings):** Stream 1, Stream 2.
- Key:** PCU Arr, Dec, Sat, M120 (PCU) →

Geometric and Traffic Flow Details:

- Stream 1 (C1):** 2, 1, 41
- Stream 2 (C1):** 47 - 8
- Stream 3 (C1):** 14 - 41
- Stream 1 (C2):** 29 - 49
- Stream 2 (C2):** 9 - 27
- Stream 1 (C3):** 33 - 3
- Stream 2 (C3):** 45 - 0

Other Labels: M1 J22 / A50 / A511, M1 Nth, M1 Sth, M1 N/B, M1 S/B, A50 W/B, A50 E/B, A50 WB Entry, A50 EB Exit, Cliffe Lane, On-slip, Off-slip, Pedestrian Crossing.

Detailed Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Bonus Green	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	-	86.4%
M1 J22 / A50 / A511	-	-	N/A	-	-		-	-	-	-	-	-	-	86.4%
1/1	Circ Sth Ahead Ahead2	U	1:1	N/A	C1:A		1	32	-	-	897	1995	1097	81.7%
1/2	Circ Sth Right Ahead	U	1:1	N/A	C1:A		1	32	-	-	958	2093	1151	83.2%
1/3	Circ Sth Right	U	1:1	N/A	C1:A		1	32	-	-	696	1956	1076	64.7%
2/2+2/1	M1 N/B Off-slip Ahead Left Left2	U	1:1	N/A	C1:B		1	15	-	-	908	1966:1977	524+527	86.4 : 86.3%
2/3	M1 N/B Off-slip Ahead	U	1:1	N/A	C1:B		1	15	-	-	34	1978	527	6.4%
3/1	Circ W Ahead	U	1:2	N/A	C1:C		1	27	-	-	227	1995	931	24.4%
3/2+3/3	Circ W Right Ahead	U	1:2	N/A	C1:C		1	27	-	-	761	2132:1995	932+87	74.7 : 74.7%
4/2+4/1	A511 E/B Ahead Left	U	1:2	N/A	C1:D		1	21	-	-	980	2120:1966	777+372	85.3 : 85.3%
4/3	A511 E/B Ahead	U	1:2	N/A	C1:D		1	21	-	-	587	1983	727	80.7%
5/1	Circ Nth Ahead	U	2:1	N/A	C2:A		1	19	-	-	666	2034	798	83.5%
5/2	Circ Nth Right Ahead	U	2:1	N/A	C2:A		1	19	-	-	652	2034	798	81.7%
6/2+6/1	M1 S/B Off Slip Ahead Left	U	2:1	N/A	C2:B		1	20	-	-	1106	2027:2027	835+588	77.8 : 77.8%
6/3	M1 S/B Off Slip Ahead	U	2:1	N/A	C2:B		1	20	-	-	485	2027	835	58.1%
7/1	Circ E Ahead	U	2:2	N/A	C2:C		1	18	-	-	630	2065	769	81.9%
7/2+7/3	Circ E Right Ahead	U	2:2	N/A	C2:C		1	18	-	-	529	2168:2025	705+542	42.4 : 42.4%
8/1+8/2	A50 W/B Ahead Left	U	2:2	N/A	C2:D		1	21	-	-	1424	1953:2090	842+902	82.5 : 80.9%

Detailed Input Data And Results

8/3	A50 W/B Ahead	U	2:2	N/A	C2:D		1	21	-	-	695	1953	842	82.5%
9/1		U	N/A	N/A	-		-	-	-	-	1283	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	-	1280	Inf	Inf	0.0%
10/1	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	544	Inf	Inf	0.0%
10/2	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	693	Inf	Inf	0.0%
11/1	A50 EB Exit Pedestrian Crossing Ahead	U	3:1	N/A	C3:A		1	209	-	-	1123	1980	1824	61.6%
11/2	A50 EB Exit Pedestrian Crossing Ahead	U	3:1	N/A	C3:A		1	209	-	-	627	1980	1824	34.4%
12/1	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	686	Inf	Inf	0.0%
12/2	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	41	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	-	90	Inf	Inf	0.0%
14/1	Cliffe Lane Left Left2	O	N/A	N/A	-		-	-	-	-	148	2005	241	61.3%
15/1		U	N/A	N/A	-		-	-	-	-	1123	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	-	627	Inf	Inf	0.0%
16/1	A50 WB Entry Pedestrian Crossing Ahead	U	3:2	N/A	C3:B		1	209	-	-	1424	1980	1824	78.1%
16/2	A50 WB Entry Pedestrian Crossing Ahead	U	3:2	N/A	C3:B		1	209	-	-	695	1980	1824	38.1%

Detailed Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
Network	-	-	58	90	0	45.7	18.7	0.0	64.5	-	-	-	-	
M1 J22 / A50 / A511	-	-	58	90	0	45.7	18.7	0.0	64.5	-	-	-	-	
1/1	897	897	-	-	-	2.8	0.0	-	2.8	11.0	12.2	0.0	12.2	
1/2	958	958	-	-	-	3.0	0.0	-	3.0	11.2	13.0	0.0	13.0	
1/3	696	696	-	-	-	1.8	0.0	-	1.8	9.4	7.9	0.0	7.9	
2/2+2/1	908	908	-	-	-	5.3	3.0	-	8.3	33.0	7.2	3.0	10.2	
2/3	34	34	-	-	-	0.2	0.0	-	0.2	20.1	0.4	0.0	0.5	
3/1	227	227	-	-	-	0.7	0.0	-	0.7	10.5	1.9	0.0	1.9	
3/2+3/3	761	761	-	-	-	1.3	0.0	-	1.3	6.1	2.2	0.0	2.2	
4/2+4/1	980	980	-	-	-	4.5	2.8	-	7.3	26.8	10.1	2.8	12.9	
4/3	587	587	-	-	-	2.8	2.0	-	4.8	29.6	8.6	2.0	10.7	
5/1	666	666	-	-	-	2.6	0.0	-	2.6	14.0	8.5	0.0	8.5	
5/2	652	652	-	-	-	2.5	0.0	-	2.5	13.9	8.2	0.0	8.2	
6/2+6/1	1106	1106	-	-	-	3.8	1.7	-	5.5	18.0	7.9	1.7	9.7	
6/3	485	485	-	-	-	1.6	0.7	-	2.3	16.7	5.3	0.7	5.9	
7/1	630	630	-	-	-	0.9	0.0	-	0.9	5.1	2.3	0.0	2.3	
7/2+7/3	529	529	-	-	-	2.3	0.0	-	2.3	15.8	3.8	0.0	3.8	
8/1+8/2	1424	1424	-	-	-	5.0	2.2	-	7.2	18.3	8.9	2.2	11.1	
8/3	695	695	-	-	-	2.5	2.3	-	4.8	24.6	8.7	2.3	11.0	
9/1	1283	1283	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/2	1280	1280	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	544	544	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/2	693	693	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	1123	1123	-	-	-	0.5	0.8	-	1.3	4.2	12.8	0.8	13.6	

Detailed Input Data And Results

11/2	627	627	-	-	-	0.2	0.3	-	0.4	2.5	4.5	0.3	4.8	
12/1	686	686	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/2	41	41	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
13/1	90	90	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
14/1	148	148	58	90	0	0.4	0.8	-	1.2	29.7	1.5	0.8	2.3	
15/1	1123	1123	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
15/2	627	627	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
16/1	1424	1424	-	-	-	1.0	1.8	-	2.8	7.0	25.3	1.8	27.1	
16/2	695	695	-	-	-	0.2	0.3	-	0.5	2.7	5.2	0.3	5.5	
C1 - M1/J22 A50/A511 Controller 1 Stream: 1 PRC for Signalled Lanes (%) 4.2 C1 - M1/J22 A50/A511 Controller 1 Stream: 2 PRC for Signalled Lanes (%) 5.5 C2 - M1/J22 A50/A511 Controller 2 Stream: 1 PRC for Signalled Lanes (%) 7.8 C2 - M1/J22 A50/A511 Controller 2 Stream: 2 PRC for Signalled Lanes (%) 9.1 C3 - A50 East Pedestrian Crossings Stream: 1 PRC for Signalled Lanes (%) 46.2 C3 - A50 East Pedestrian Crossings Stream: 2 PRC for Signalled Lanes (%) 15.3 PRC Over All Lanes (%) 4.2 Total Delay for Signalled Lanes (pcuHr): 16.07 Total Delay for Signalled Lanes (pcuHr): 14.08 Total Delay for Signalled Lanes (pcuHr): 12.87 Total Delay for Signalled Lanes (pcuHr): 15.19 Total Delay for Signalled Lanes (pcuHr): 1.75 Total Delay for Signalled Lanes (pcuHr): 3.29 Total Delay Over All Lanes(pcuHr): 64.47 Cycle Time (s): 60 Cycle Time (s): 60 Cycle Time (s): 51 Cycle Time (s): 51 Cycle Time (s): 228 Cycle Time (s): 228														

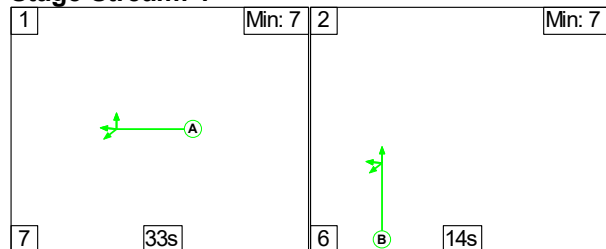
Detailed Input Data And Results

Scenario 5: '2036 Future Base + Proposed Development AM Peak' (FG5: '2036 Future Base + Proposed Development AM Peak', Plan 1: 'Network Control Plan 1')

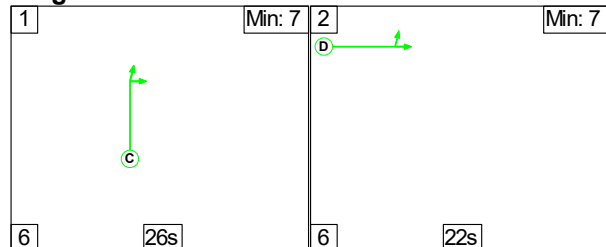
Controller :C1 - M1/J22 A50/A511 Controller 1

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

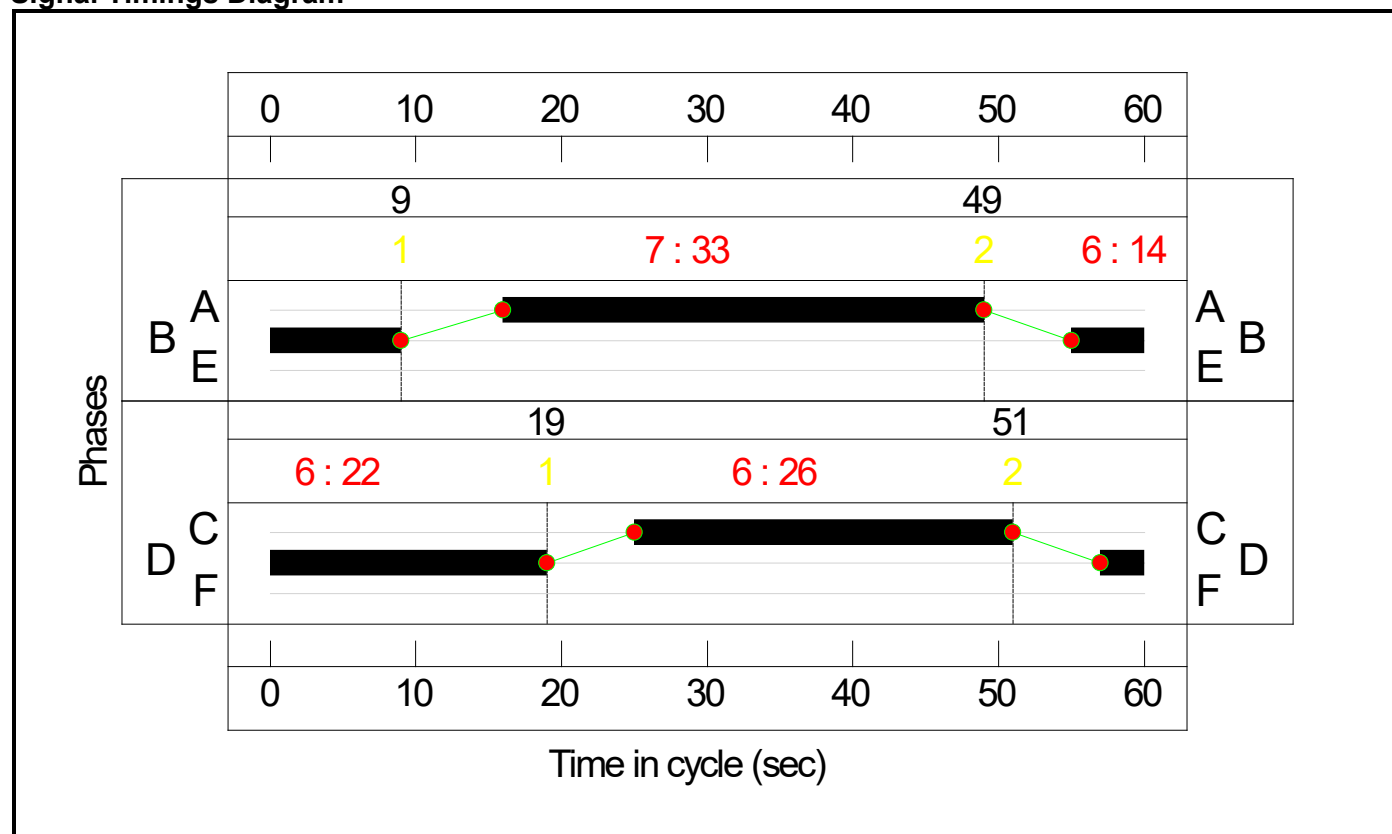
Stage	1	2
Duration	33	14
Change Point	9	49

Stage Stream: 2

Stage	1	2
Duration	26	22
Change Point	19	51

Phase Timings

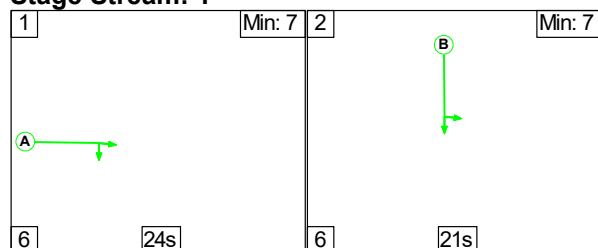
Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Sth Right Ahead Ahead2	Traffic	1	33	16	49
B	M1 N/B Off-slip Ahead Left Left2	Traffic	1	14	55	9
C	Circ W Right Ahead	Traffic	2	26	25	51
D	A511 E/B Ahead Left	Traffic	2	22	57	19
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

Signal Timings Diagram

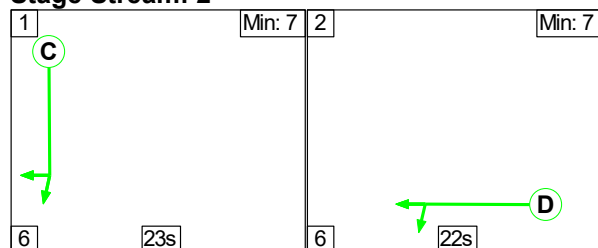
Controller : C2 - M1/J22 A50/A511 Controller 2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2

**Stage Timings**

Stage Stream: 1

Stage	1	2
Duration	24	21
Change Point	32	5

Detailed Input Data And Results

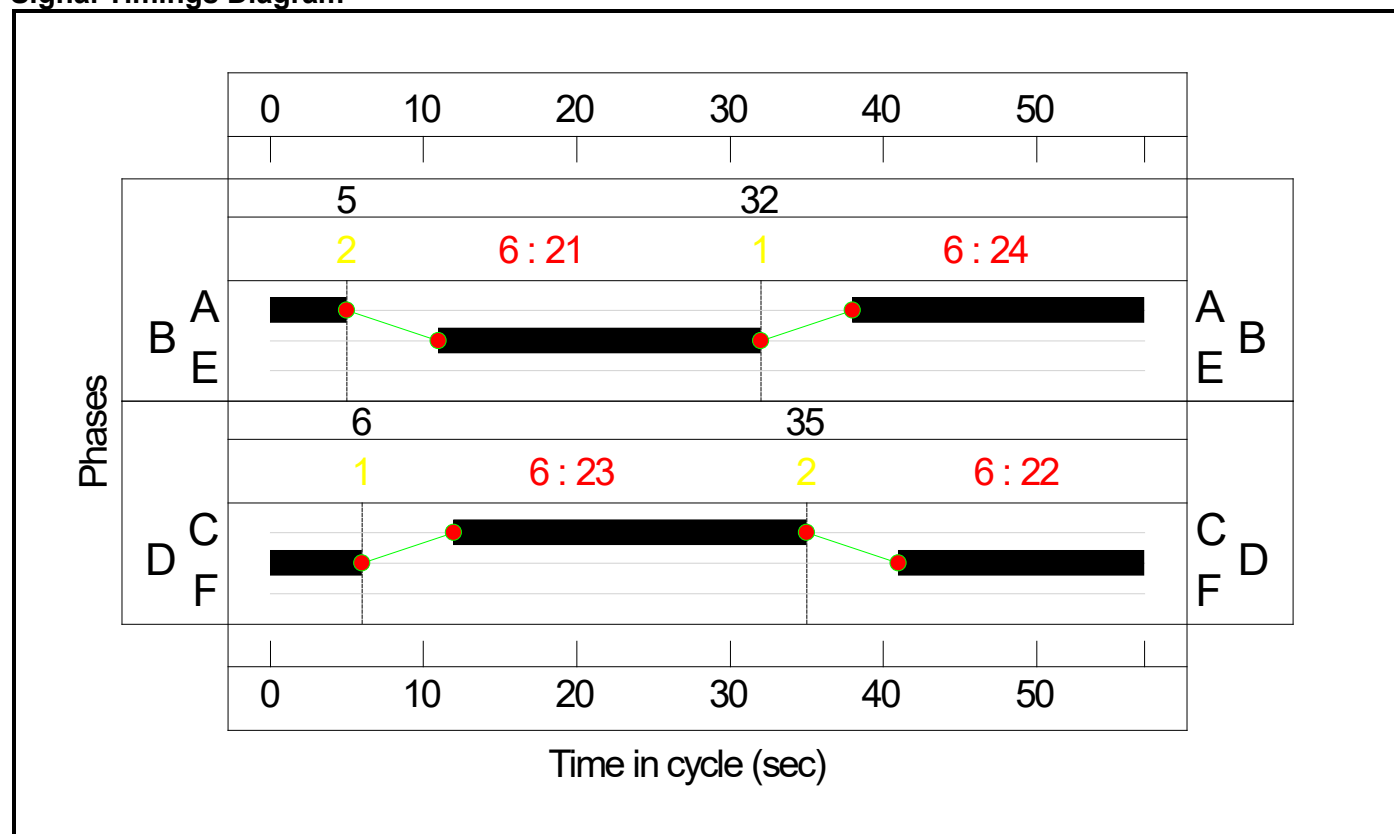
Stage Stream: 2

Stage	1	2
Duration	23	22
Change Point	6	35

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Nth Right Ahead	Traffic	1	24	38	5
B	M1 S/B Off Slip Ahead Left	Traffic	1	21	11	32
C	Circ E Right Ahead	Traffic	2	23	12	35
D	A50 W/B Ahead Left	Traffic	2	22	41	6
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

Signal Timings Diagram

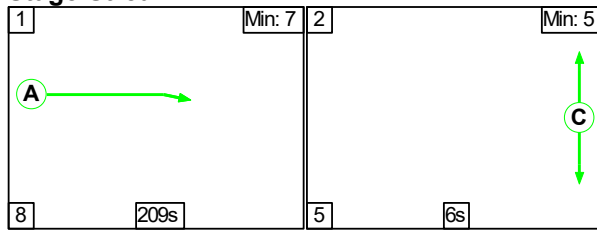


Detailed Input Data And Results

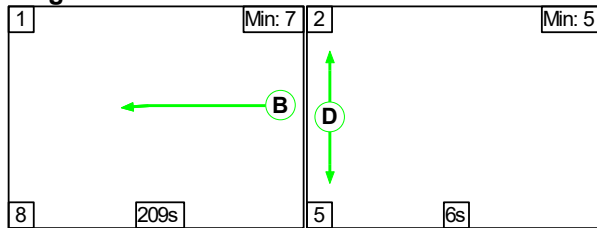
Controller :C3 - A50 East Pedestrian Crossings

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	209	6
Change Point	205	194

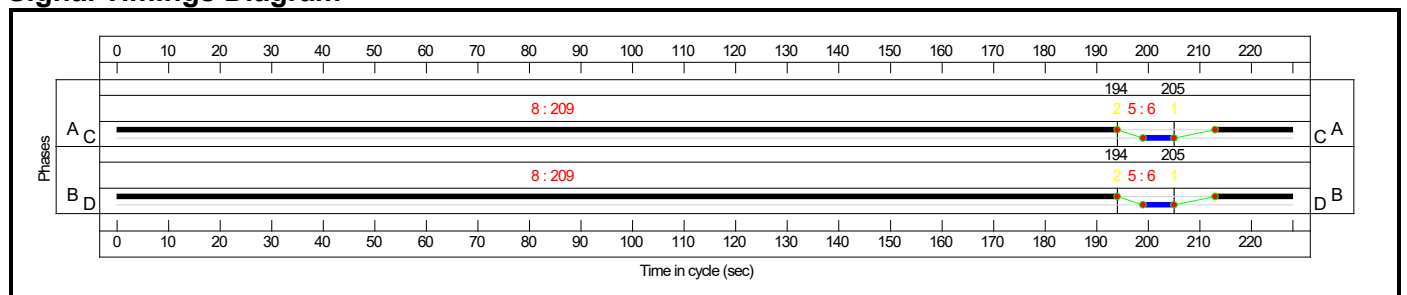
Stage Stream: 2

Stage	1	2
Duration	209	6
Change Point	205	194

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	A50 EB Exit Pedestrian Crossing Ahead	Traffic	1	209	213	194
B	A50 WB Entry Pedestrian Crossing Ahead	Traffic	2	209	213	194
C	Pedestrians across	Pedestrian	1	6	199	205
D	Pedestrians across	Pedestrian	2	6	199	205

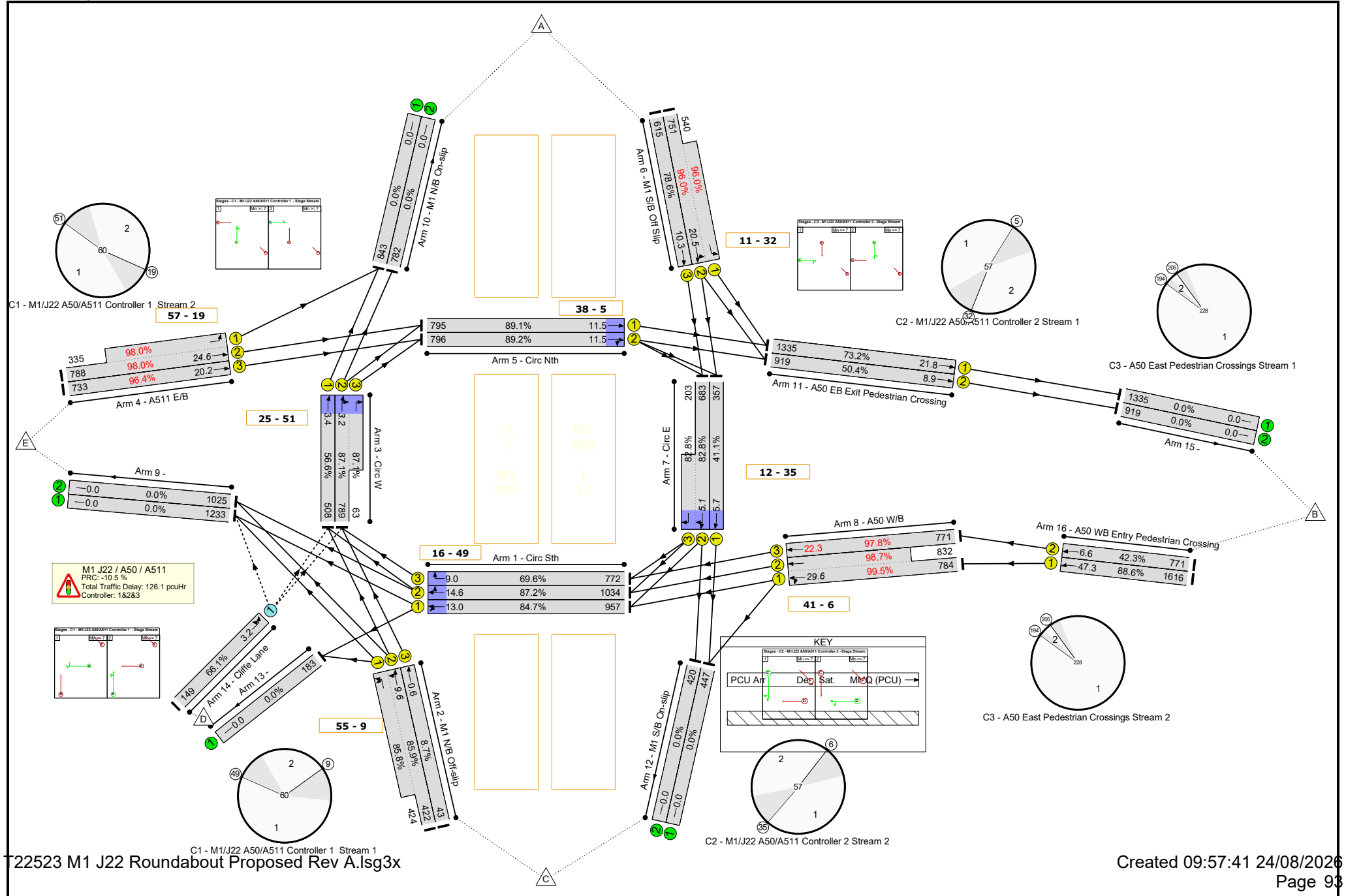
Signal Timings Diagram



Lane Green Times

Junction: M1 J22 / A50 / A511					
Lane	Description	Type	Phases	Start Green	End Green
1/1	Circ Sth Ahead Ahead2	U	A	16	49
1/2	Circ Sth Right Ahead	U	A	16	49
1/3	Circ Sth Right	U	A	16	49
2/1	M1 N/B Off-slip Left Left2	U	B	55	9
2/2	M1 N/B Off-slip Ahead Left	U	B	55	9
2/3	M1 N/B Off-slip Ahead	U	B	55	9
3/1	Circ W Ahead	U	C	25	51
3/2	Circ W Right Ahead	U	C	25	51
3/3	Circ W Right	U	C	25	51
4/1	A511 E/B Left	U	D	57	19
4/2	A511 E/B Ahead	U	D	57	19
4/3	A511 E/B Ahead	U	D	57	19
5/1	Circ Nth Ahead	U	A	38	5
5/2	Circ Nth Right Ahead	U	A	38	5
6/1	M1 S/B Off Slip Left	U	B	11	32
6/2	M1 S/B Off Slip Ahead Left	U	B	11	32
6/3	M1 S/B Off Slip Ahead	U	B	11	32
7/1	Circ E Ahead	U	C	12	35
7/2	Circ E Right Ahead	U	C	12	35
7/3	Circ E Right	U	C	12	35
8/1	A50 W/B Ahead Left	U	D	41	6
8/2	A50 W/B Ahead	U	D	41	6
8/3	A50 W/B Ahead	U	D	41	6
11/1	A50 EB Exit Pedestrian Crossing Ahead	U	A	213	194
11/2	A50 EB Exit Pedestrian Crossing Ahead	U	A	213	194
16/1	A50 WB Entry Pedestrian Crossing Ahead	U	B	213	194
16/2	A50 WB Entry Pedestrian Crossing Ahead	U	B	213	194

Detailed Input Data And Results



Detailed Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Bonus Green	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	-	99.5%
M1 J22 / A50 / A511	-	-	N/A	-	-		-	-	-	-	-	-	-	99.5%
1/1	Circ Sth Ahead Ahead2	U	1:1	N/A	C1:A		1	33	-	-	957	1995	1131	84.7%
1/2	Circ Sth Right Ahead	U	1:1	N/A	C1:A		1	33	-	-	1034	2093	1186	87.2%
1/3	Circ Sth Right	U	1:1	N/A	C1:A		1	33	-	-	772	1956	1108	69.6%
2/2+2/1	M1 N/B Off-slip Ahead Left Left2	U	1:1	N/A	C1:B		1	14	-	-	846	1966:1977	492+494	85.9 : 85.8%
2/3	M1 N/B Off-slip Ahead	U	1:1	N/A	C1:B		1	14	-	-	43	1978	494	8.7%
3/1	Circ W Ahead	U	1:2	N/A	C1:C		1	26	-	-	508	1995	898	56.6%
3/2+3/3	Circ W Right Ahead	U	1:2	N/A	C1:C		1	26	-	-	852	2132:1995	906+72	87.1 : 87.1%
4/2+4/1	A511 E/B Ahead Left	U	1:2	N/A	C1:D		1	22	-	-	1123	2120:1966	804+342	98.0 : 98.0%
4/3	A511 E/B Ahead	U	1:2	N/A	C1:D		1	22	-	-	733	1983	760	96.4%
5/1	Circ Nth Ahead	U	2:1	N/A	C2:A		1	24	-	-	795	2034	892	89.1%
5/2	Circ Nth Right Ahead	U	2:1	N/A	C2:A		1	24	-	-	796	2034	892	89.2%
6/2+6/1	M1 S/B Off Slip Ahead Left	U	2:1	N/A	C2:B		1	21	-	-	1291	2027:2027	782+563	96.0 : 96.0%
6/3	M1 S/B Off Slip Ahead	U	2:1	N/A	C2:B		1	21	-	-	615	2027	782	78.6%
7/1	Circ E Ahead	U	2:2	N/A	C2:C		1	23	-	-	357	2065	869	41.1%
7/2+7/3	Circ E Right Ahead	U	2:2	N/A	C2:C		1	23	-	-	886	2188:2025	825+245	82.8 : 82.8%
8/1+8/2	A50 W/B Ahead Left	U	2:2	N/A	C2:D		1	22	-	-	1616	1953:2090	788+843	99.5 : 98.7%

Detailed Input Data And Results

8/3	A50 W/B Ahead	U	2:2	N/A	C2:D		1	22	-	-	771	1953	788	97.8%
9/1		U	N/A	N/A	-		-	-	-	-	1233	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	-	1025	Inf	Inf	0.0%
10/1	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	843	Inf	Inf	0.0%
10/2	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	782	Inf	Inf	0.0%
11/1	A50 EB Exit Pedestrian Crossing Ahead	U	3:1	N/A	C3:A		1	209	-	-	1335	1980	1824	73.2%
11/2	A50 EB Exit Pedestrian Crossing Ahead	U	3:1	N/A	C3:A		1	209	-	-	919	1980	1824	50.4%
12/1	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	447	Inf	Inf	0.0%
12/2	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	420	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	-	183	Inf	Inf	0.0%
14/1	Cliffe Lane Left Left2	O	N/A	N/A	-		-	-	-	-	149	2005	225	66.1%
15/1		U	N/A	N/A	-		-	-	-	-	1335	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	-	919	Inf	Inf	0.0%
16/1	A50 WB Entry Pedestrian Crossing Ahead	U	3:2	N/A	C3:B		1	209	-	-	1616	1980	1824	88.6%
16/2	A50 WB Entry Pedestrian Crossing Ahead	U	3:2	N/A	C3:B		1	209	-	-	771	1980	1824	42.3%

Detailed Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
Network	-	-	42	107	0	58.3	67.9	0.0	126.1	-	-	-	-	
M1 J22 / A50 / A511	-	-	42	107	0	58.3	67.9	0.0	126.1	-	-	-	-	
1/1	957	957	-	-	-	2.9	0.0	-	2.9	10.8	13.0	0.0	13.0	
1/2	1034	1034	-	-	-	3.2	0.0	-	3.2	11.1	14.6	0.0	14.6	
1/3	772	772	-	-	-	2.0	0.0	-	2.0	9.3	9.0	0.0	9.0	
2/2+2/1	846	846	-	-	-	5.1	2.9	-	8.0	33.9	6.7	2.9	9.6	
2/3	43	43	-	-	-	0.2	0.0	-	0.3	21.2	0.5	0.0	0.6	
3/1	508	508	-	-	-	1.3	0.0	-	1.3	8.9	3.4	0.0	3.4	
3/2+3/3	852	852	-	-	-	1.6	0.0	-	1.6	6.7	3.2	0.0	3.2	
4/2+4/1	1123	1123	-	-	-	5.3	11.9	-	17.2	55.1	12.7	11.9	24.6	
4/3	733	733	-	-	-	3.7	8.4	-	12.0	59.1	11.8	8.4	20.2	
5/1	795	795	-	-	-	3.3	0.0	-	3.3	14.7	11.5	0.0	11.5	
5/2	796	796	-	-	-	3.3	0.0	-	3.3	14.8	11.5	0.0	11.5	
6/2+6/1	1291	1291	-	-	-	5.8	9.0	-	14.7	41.1	11.5	9.0	20.5	
6/3	615	615	-	-	-	2.6	1.8	-	4.4	26.0	8.5	1.8	10.3	
7/1	357	357	-	-	-	1.6	0.0	-	1.6	15.7	5.7	0.0	5.7	
7/2+7/3	886	886	-	-	-	1.9	0.0	-	1.9	7.6	5.1	0.0	5.1	
8/1+8/2	1616	1616	-	-	-	7.6	16.6	-	24.2	53.9	12.9	16.6	29.6	
8/3	771	771	-	-	-	3.6	10.3	-	13.8	64.7	12.0	10.3	22.3	
9/1	1233	1233	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/2	1025	1025	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	843	843	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/2	782	782	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	1335	1335	-	-	-	0.8	1.4	-	2.2	5.8	20.4	1.4	21.8	

Detailed Input Data And Results

11/2	919	919	-	-	-	0.3	0.5	-	0.8	3.3	8.4	0.5	8.9	
12/1	447	447	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/2	420	420	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
13/1	183	183	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
14/1	149	149	42	107	0	0.5	1.0	-	1.5	35.4	2.2	1.0	3.2	
15/1	1335	1335	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
15/2	919	919	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
16/1	1616	1616	-	-	-	1.7	3.8	-	5.5	12.2	43.5	3.8	47.3	
16/2	771	771	-	-	-	0.2	0.4	-	0.6	2.9	6.2	0.4	6.6	
C1 - M1/J22 A50/A511 Controller 1 Stream: 1 PRC for Signalled Lanes (%) 3.2 C1 - M1/J22 A50/A511 Controller 1 Stream: 2 PRC for Signalled Lanes (%) -8.9 C2 - M1/J22 A50/A511 Controller 2 Stream: 1 PRC for Signalled Lanes (%) -6.7 C2 - M1/J22 A50/A511 Controller 2 Stream: 2 PRC for Signalled Lanes (%) -10.5 C3 - A50 East Pedestrian Crossings Stream: 1 PRC for Signalled Lanes (%) 22.9 C3 - A50 East Pedestrian Crossings Stream: 2 PRC for Signalled Lanes (%) 1.6 PRC Over All Lanes (%) -10.5 Total Delay for Signalled Lanes (pcuHr) 16.28 Total Delay for Signalled Lanes (pcuHr) 32.08 Total Delay for Signalled Lanes (pcuHr) 25.70 Total Delay for Signalled Lanes (pcuHr) 41.47 Total Delay for Signalled Lanes (pcuHr) 3.01 Total Delay for Signalled Lanes (pcuHr) 6.11 Total Delay Over All Lanes(pcuHr) 126.11 Cycle Time (s) 60 Cycle Time (s) 60 Cycle Time (s) 57 Cycle Time (s) 57 Cycle Time (s) 228 Cycle Time (s) 228														

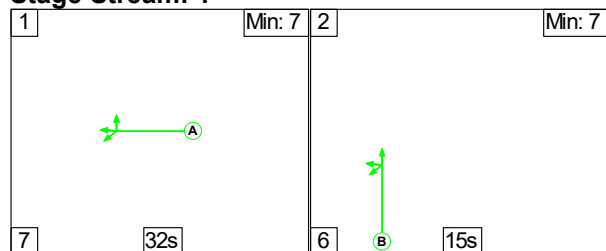
Detailed Input Data And Results

Scenario 6: '2036 Future Base + Proposed Development PM Peak' (FG6: '2036 Future Base + Proposed Development PM Peak', Plan 1: 'Network Control Plan 1')

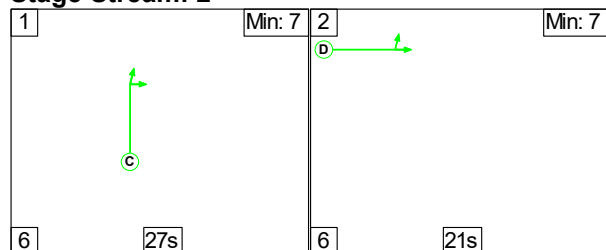
Controller :C1 - M1/J22 A50/A511 Controller 1

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

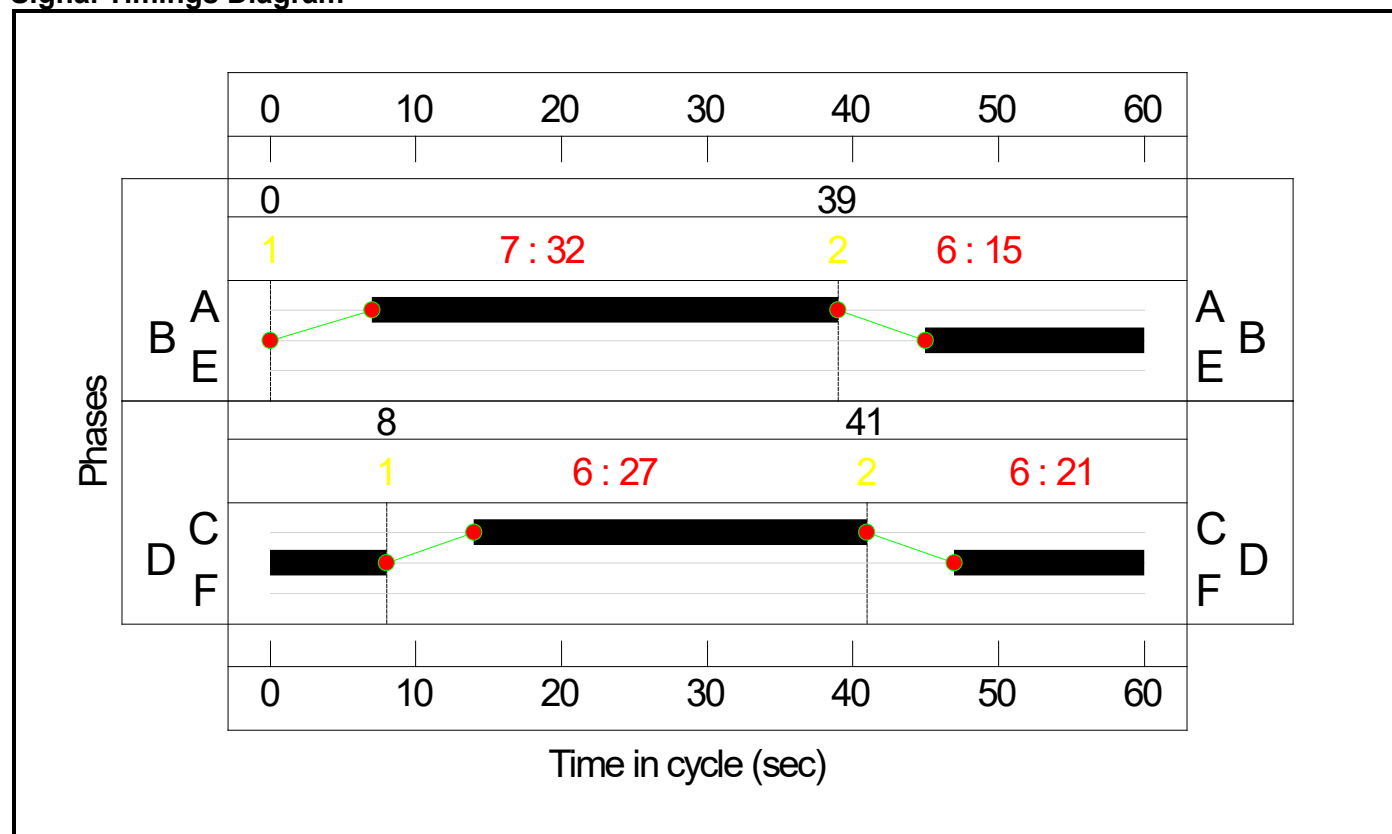
Stage	1	2
Duration	32	15
Change Point	0	39

Stage Stream: 2

Stage	1	2
Duration	27	21
Change Point	8	41

Phase Timings

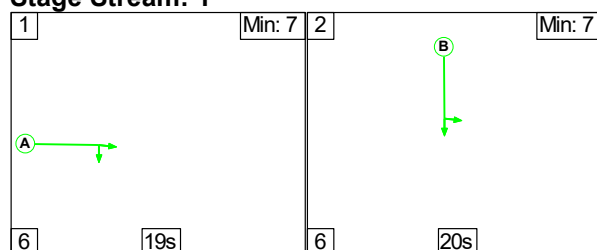
Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Sth Right Ahead Ahead2	Traffic	1	32	7	39
B	M1 N/B Off-slip Ahead Left Left2	Traffic	1	15	45	0
C	Circ W Right Ahead	Traffic	2	27	14	41
D	A511 E/B Ahead Left	Traffic	2	21	47	8
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

Signal Timings Diagram

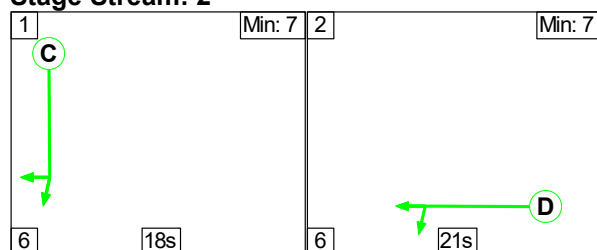
Controller : C2 - M1/J22 A50/A511 Controller 2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2

**Stage Timings**

Stage Stream: 1

Stage	1	2
Duration	19	20
Change Point	49	23

Detailed Input Data And Results

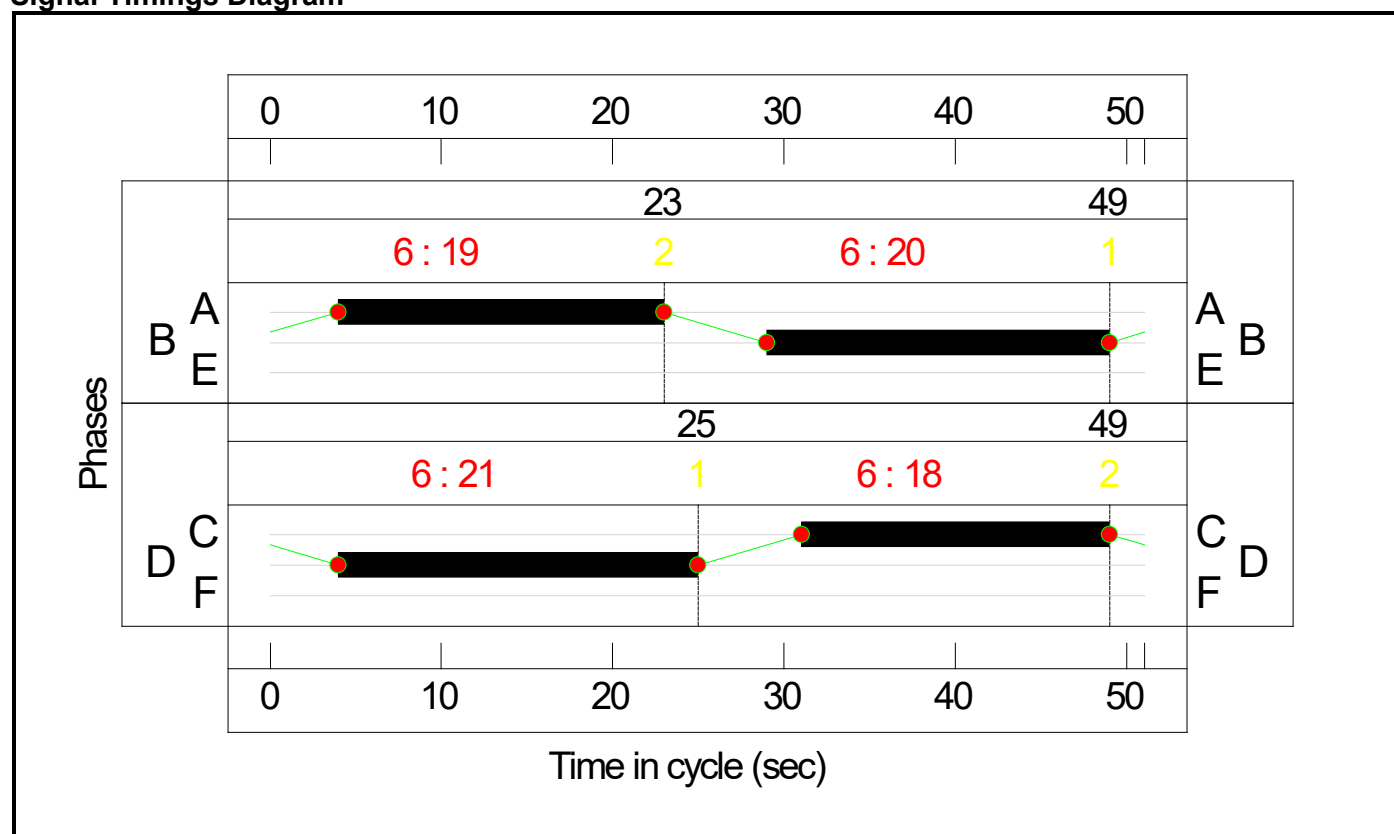
Stage Stream: 2

Stage	1	2
Duration	18	21
Change Point	25	49

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	Circ Nth Right Ahead	Traffic	1	19	4	23
B	M1 S/B Off Slip Ahead Left	Traffic	1	20	29	49
C	Circ E Right Ahead	Traffic	2	18	31	49
D	A50 W/B Ahead Left	Traffic	2	21	4	25
E	Dummy Dummy O/N revert Stream 1	Dummy	1			
F	Dummy Dummy O/N revert Stream 2	Dummy	2			

Signal Timings Diagram

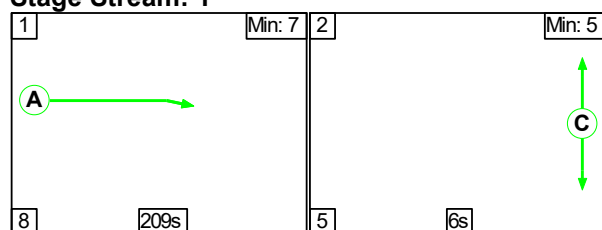


Detailed Input Data And Results

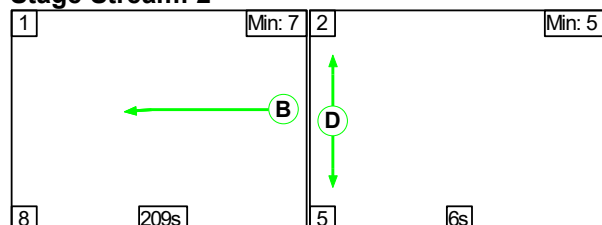
Controller :C3 - A50 East Pedestrian Crossings

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	209	6
Change Point	226	215

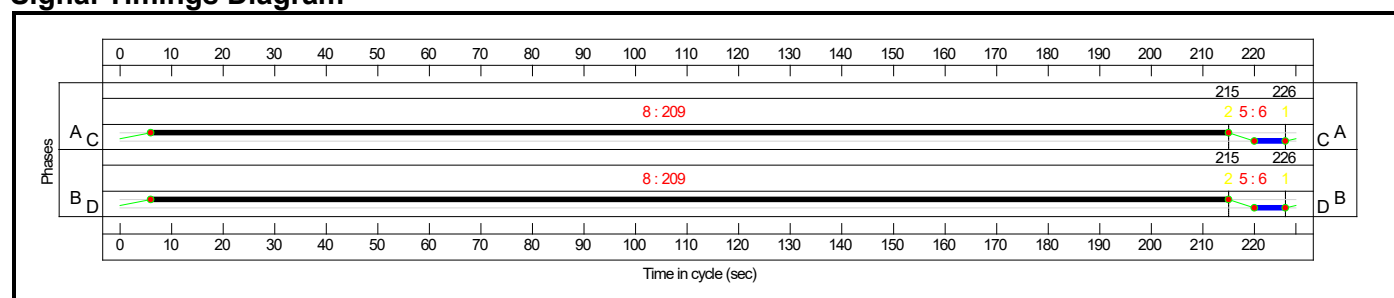
Stage Stream: 2

Stage	1	2
Duration	209	6
Change Point	226	215

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	A50 EB Exit Pedestrian Crossing Ahead	Traffic	1	209	6	215
B	A50 WB Entry Pedestrian Crossing Ahead	Traffic	2	209	6	215
C	Pedestrians across	Pedestrian	1	6	220	226
D	Pedestrians across	Pedestrian	2	6	220	226

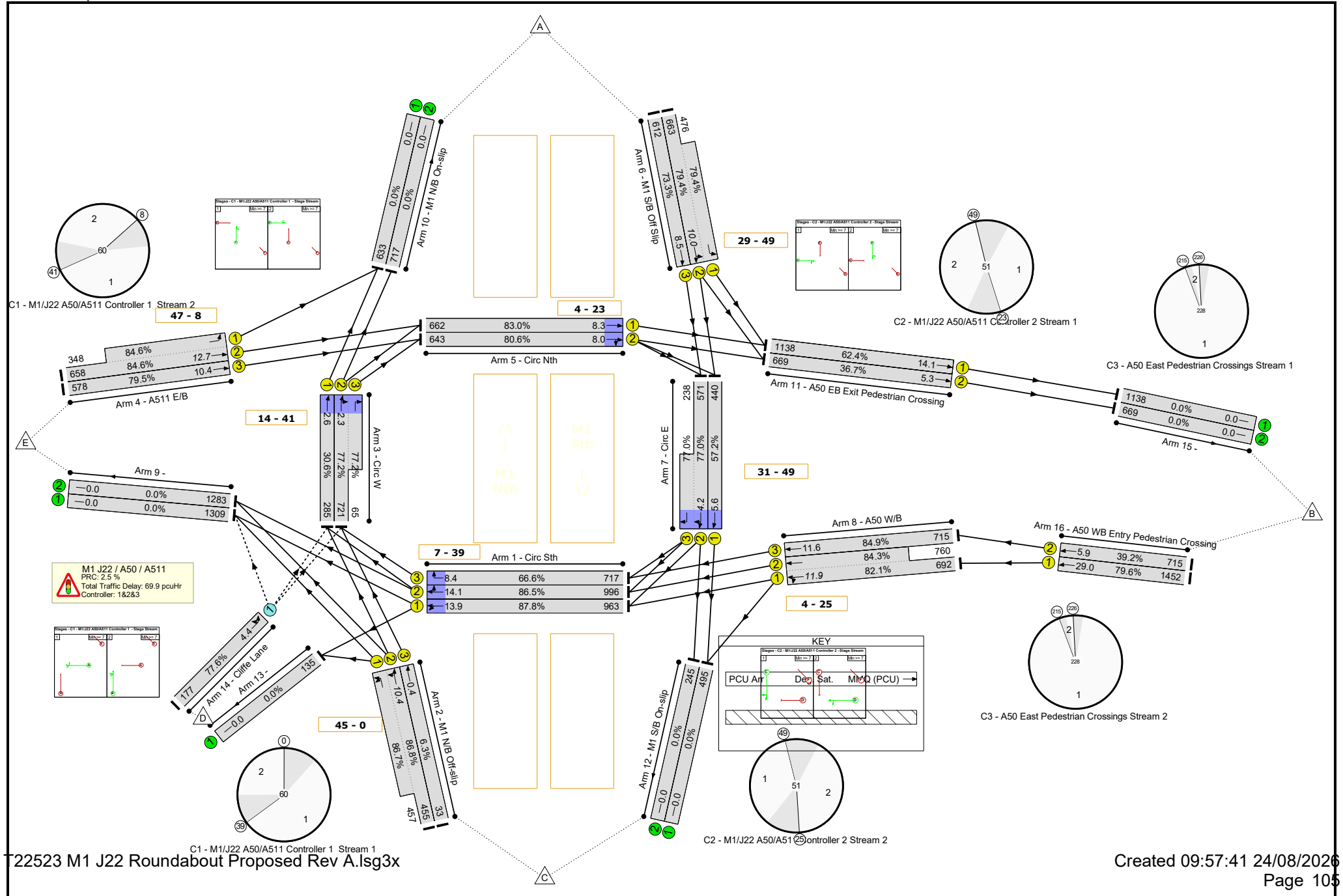
Signal Timings Diagram



Lane Green Times

Junction: M1 J22 / A50 / A511					
Lane	Description	Type	Phases	Start Green	End Green
1/1	Circ Sth Ahead Ahead2	U	A	7	39
1/2	Circ Sth Right Ahead	U	A	7	39
1/3	Circ Sth Right	U	A	7	39
2/1	M1 N/B Off-slip Left Left2	U	B	45	0
2/2	M1 N/B Off-slip Ahead Left	U	B	45	0
2/3	M1 N/B Off-slip Ahead	U	B	45	0
3/1	Circ W Ahead	U	C	14	41
3/2	Circ W Right Ahead	U	C	14	41
3/3	Circ W Right	U	C	14	41
4/1	A511 E/B Left	U	D	47	8
4/2	A511 E/B Ahead	U	D	47	8
4/3	A511 E/B Ahead	U	D	47	8
5/1	Circ Nth Ahead	U	A	4	23
5/2	Circ Nth Right Ahead	U	A	4	23
6/1	M1 S/B Off Slip Left	U	B	29	49
6/2	M1 S/B Off Slip Ahead Left	U	B	29	49
6/3	M1 S/B Off Slip Ahead	U	B	29	49
7/1	Circ E Ahead	U	C	31	49
7/2	Circ E Right Ahead	U	C	31	49
7/3	Circ E Right	U	C	31	49
8/1	A50 W/B Ahead Left	U	D	4	25
8/2	A50 W/B Ahead	U	D	4	25
8/3	A50 W/B Ahead	U	D	4	25
11/1	A50 EB Exit Pedestrian Crossing Ahead	U	A	6	215
11/2	A50 EB Exit Pedestrian Crossing Ahead	U	A	6	215
16/1	A50 WB Entry Pedestrian Crossing Ahead	U	B	6	215
16/2	A50 WB Entry Pedestrian Crossing Ahead	U	B	6	215

Detailed Input Data And Results



Detailed Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Bonus Green	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	-	87.8%
M1 J22 / A50 / A511	-	-	N/A	-	-		-	-	-	-	-	-	-	87.8%
1/1	Circ Sth Ahead Ahead2	U	1:1	N/A	C1:A		1	32	-	-	963	1995	1097	87.8%
1/2	Circ Sth Right Ahead	U	1:1	N/A	C1:A		1	32	-	-	996	2093	1151	86.5%
1/3	Circ Sth Right	U	1:1	N/A	C1:A		1	32	-	-	717	1956	1076	66.6%
2/2+2/1	M1 N/B Off-slip Ahead Left Left2	U	1:1	N/A	C1:B		1	15	-	-	912	1966:1977	524+527	86.8 : 86.7%
2/3	M1 N/B Off-slip Ahead	U	1:1	N/A	C1:B		1	15	-	-	33	1978	527	6.3%
3/1	Circ W Ahead	U	1:2	N/A	C1:C		1	27	-	-	285	1995	931	30.6%
3/2+3/3	Circ W Right Ahead	U	1:2	N/A	C1:C		1	27	-	-	786	2132:1995	934+84	77.2 : 77.2%
4/2+4/1	A511 E/B Ahead Left	U	1:2	N/A	C1:D		1	21	-	-	1006	2120:1966	777+411	84.6 : 84.6%
4/3	A511 E/B Ahead	U	1:2	N/A	C1:D		1	21	-	-	578	1983	727	79.5%
5/1	Circ Nth Ahead	U	2:1	N/A	C2:A		1	19	-	-	662	2034	798	83.0%
5/2	Circ Nth Right Ahead	U	2:1	N/A	C2:A		1	19	-	-	643	2034	798	80.6%
6/2+6/1	M1 S/B Off Slip Ahead Left	U	2:1	N/A	C2:B		1	20	-	-	1139	2027:2027	835+599	79.4 : 79.4%
6/3	M1 S/B Off Slip Ahead	U	2:1	N/A	C2:B		1	20	-	-	612	2027	835	73.3%
7/1	Circ E Ahead	U	2:2	N/A	C2:C		1	18	-	-	440	2065	769	57.2%
7/2+7/3	Circ E Right Ahead	U	2:2	N/A	C2:C		1	18	-	-	809	2180:2025	742+309	77.0 : 77.0%
8/1+8/2	A50 W/B Ahead Left	U	2:2	N/A	C2:D		1	21	-	-	1452	1953:2090	842+902	82.1 : 84.3%

Detailed Input Data And Results

8/3	A50 W/B Ahead	U	2:2	N/A	C2:D		1	21	-	-	715	1953	842	84.9%
9/1		U	N/A	N/A	-		-	-	-	-	1309	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	-	1283	Inf	Inf	0.0%
10/1	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	633	Inf	Inf	0.0%
10/2	M1 N/B On-slip	U	N/A	N/A	-		-	-	-	-	717	Inf	Inf	0.0%
11/1	A50 EB Exit Pedestrian Crossing Ahead	U	3:1	N/A	C3:A		1	209	-	-	1138	1980	1824	62.4%
11/2	A50 EB Exit Pedestrian Crossing Ahead	U	3:1	N/A	C3:A		1	209	-	-	669	1980	1824	36.7%
12/1	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	495	Inf	Inf	0.0%
12/2	M1 S/B On-slip	U	N/A	N/A	-		-	-	-	-	245	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	-	135	Inf	Inf	0.0%
14/1	Cliffe Lane Left Left2	O	N/A	N/A	-		-	-	-	-	177	2005	228	77.6%
15/1		U	N/A	N/A	-		-	-	-	-	1138	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	-	669	Inf	Inf	0.0%
16/1	A50 WB Entry Pedestrian Crossing Ahead	U	3:2	N/A	C3:B		1	209	-	-	1452	1980	1824	79.6%
16/2	A50 WB Entry Pedestrian Crossing Ahead	U	3:2	N/A	C3:B		1	209	-	-	715	1980	1824	39.2%

Detailed Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
Network	-	-	45	132	0	48.8	21.1	0.0	69.9	-	-	-	-	
M1 J22 / A50 / A511	-	-	45	132	0	48.8	21.1	0.0	69.9	-	-	-	-	
1/1	963	963	-	-	-	3.1	0.0	-	3.1	11.7	13.9	0.0	13.9	
1/2	996	996	-	-	-	3.2	0.0	-	3.2	11.6	14.1	0.0	14.1	
1/3	717	717	-	-	-	1.9	0.0	-	1.9	9.6	8.4	0.0	8.4	
2/2+2/1	912	912	-	-	-	5.3	3.1	-	8.4	33.3	7.2	3.1	10.4	
2/3	33	33	-	-	-	0.2	0.0	-	0.2	20.1	0.4	0.0	0.4	
3/1	285	285	-	-	-	0.9	0.0	-	0.9	10.9	2.6	0.0	2.6	
3/2+3/3	786	786	-	-	-	1.3	0.0	-	1.3	6.1	2.3	0.0	2.3	
4/2+4/1	1006	1006	-	-	-	4.6	2.7	-	7.3	26.1	10.1	2.7	12.7	
4/3	578	578	-	-	-	2.7	1.9	-	4.6	28.8	8.5	1.9	10.4	
5/1	662	662	-	-	-	2.6	0.0	-	2.6	14.0	8.3	0.0	8.3	
5/2	643	643	-	-	-	2.5	0.0	-	2.5	13.8	8.0	0.0	8.0	
6/2+6/1	1139	1139	-	-	-	3.9	1.9	-	5.8	18.5	8.1	1.9	10.0	
6/3	612	612	-	-	-	2.1	1.4	-	3.5	20.6	7.1	1.4	8.5	
7/1	440	440	-	-	-	1.7	0.0	-	1.7	14.1	5.6	0.0	5.6	
7/2+7/3	809	809	-	-	-	2.2	0.0	-	2.2	9.8	4.2	0.0	4.2	
8/1+8/2	1452	1452	-	-	-	5.2	2.4	-	7.6	18.9	9.5	2.4	11.9	
8/3	715	715	-	-	-	2.6	2.7	-	5.3	26.6	8.9	2.7	11.6	
9/1	1309	1309	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/2	1283	1283	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	633	633	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/2	717	717	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	1138	1138	-	-	-	0.5	0.8	-	1.4	4.3	13.3	0.8	14.1	

Detailed Input Data And Results

11/2	669	669	-	-	-	0.2	0.3	-	0.5	2.6	5.0	0.3	5.3	
12/1	495	495	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/2	245	245	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
13/1	135	135	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
14/1	177	177	45	132	0	0.7	1.6	-	2.3	46.6	2.8	1.6	4.4	
15/1	1138	1138	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
15/2	669	669	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
16/1	1452	1452	-	-	-	1.1	1.9	-	3.0	7.5	27.0	1.9	29.0	
16/2	715	715	-	-	-	0.2	0.3	-	0.5	2.7	5.6	0.3	5.9	
C1 - M1/J22 A50/A511 Controller 1 Stream: 1 PRC for Signalled Lanes (%) 2.5 Total Delay for Signalled Lanes (pcuHr): 16.89 Cycle Time (s): 60 C1 - M1/J22 A50/A511 Controller 1 Stream: 2 PRC for Signalled Lanes (%) 6.3 Total Delay for Signalled Lanes (pcuHr): 14.09 Cycle Time (s): 60 C2 - M1/J22 A50/A511 Controller 2 Stream: 1 PRC for Signalled Lanes (%) 8.4 Total Delay for Signalled Lanes (pcuHr): 14.38 Cycle Time (s): 51 C2 - M1/J22 A50/A511 Controller 2 Stream: 2 PRC for Signalled Lanes (%) 6.0 Total Delay for Signalled Lanes (pcuHr): 16.85 Cycle Time (s): 51 C3 - A50 East Pedestrian Crossings Stream: 1 PRC for Signalled Lanes (%) 44.2 Total Delay for Signalled Lanes (pcuHr): 1.85 Cycle Time (s): 228 C3 - A50 East Pedestrian Crossings Stream: 2 PRC for Signalled Lanes (%) 13.0 Total Delay for Signalled Lanes (pcuHr): 3.55 Cycle Time (s): 228 PRC Over All Lanes (%) 2.5 Total Delay Over All Lanes(pcuHr): 69.90														